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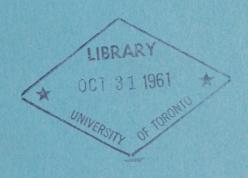
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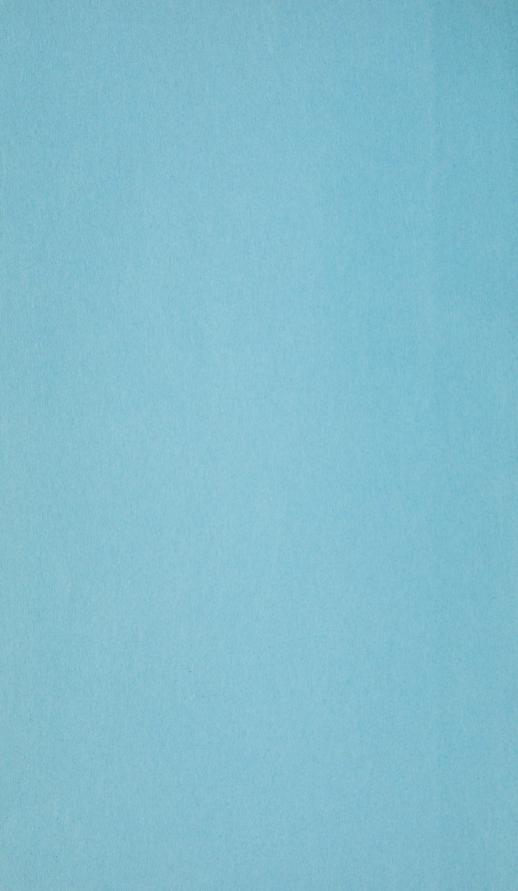
PROVINCE OF ONTARIO

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FOR THE YEAR ENDING MARCH 31, 1960



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REPORT OF THE MINISTER OF AGRICULTURE



Ontario Department of Agriculture

REPORT

OF THE

MINISTER OF AGRICULTURE

PROVINCE OF ONTARIO

FOR THE YEAR ENDING MARCH 31, 1960



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DEPARTMENT OF AGRICULTURE PROVINCE OF ONTARIO

To The Honourable Lt.-Col. John Keiller Mackay, D.S.O. Lieutenant-Governor of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the honour to submit the Report of the Department of Agriculture for the year ending March 31, 1960.

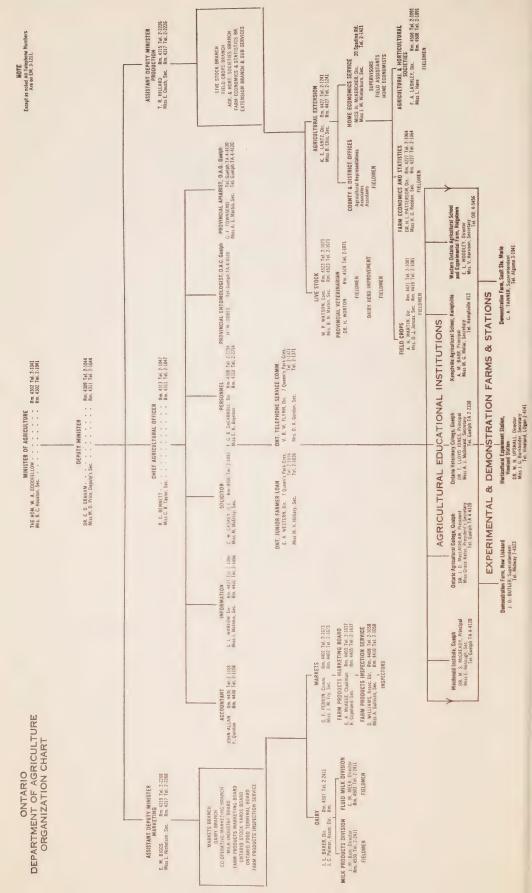
I have the honour to be, sir,

Your obedient servant,

W. A. GOODFELLOW,

Minister of Agriculture.

Toronto, March 31, 1960.



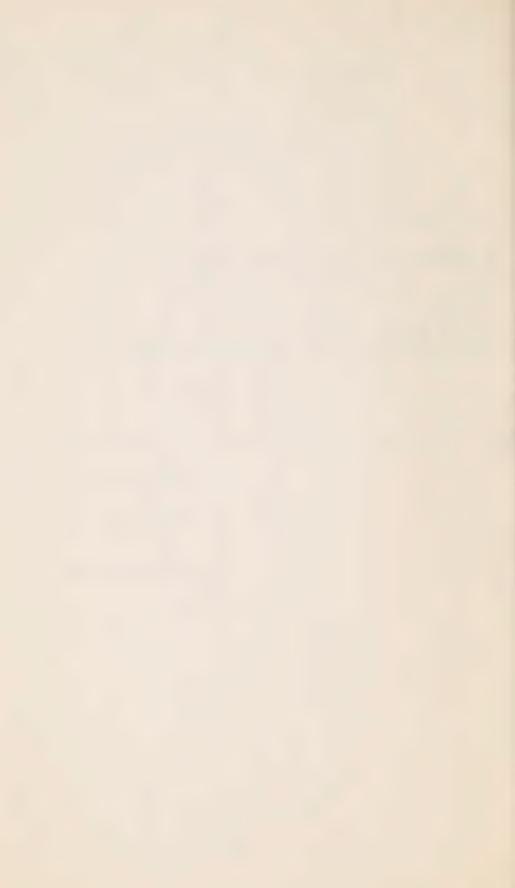
COLLEGES and

EXPERIMENTAL STATIONS

of the

DEPARTMENT OF AGRICULTURE

- · Educational
- · Research
- Demonstration



Ontario Agricultural College

COURSES AND ATTENDANCE

In the Degree Course, some additional courses have been offered by the Departments of Horticulture, Poultry Science, and Extension Education. In the Graduate School a new course was given by the Department of Poultry Science. The Associate Diploma Course is now incorporated in the newly established Department of Extension Education, with a member of the Department in charge of the program. The Short Course in Extension was open not only to personnel from the Extension Branch but also the members of the staffs of the three Colleges and of the Department of Lands and Forests. For teachers wishing to improve their standing and certification, summer courses of six weeks' duration were offered by the Departments of Physics and Chemistry.

In the undergraduate courses in Agriculture, 710 students were enrolled; in the Associate Diploma Course there were 151, in the course leading to the degree of Bachelor of Science in Agriculture there were 549, and in addition there were 10 special students. Students proceeding to the degree of Master of Science in Agriculture in the Graduate School numbered 75. The total attendance for the year at Macdonald Institute was 219; of these, 40 were registered in the one-year Diploma Course, and 179 were enrolled in the course leading to the degree of Bachelor of Household Science. Short Courses dealing with a great variety of subjects and varying in length from a few days to three months were held at different periods throughout the year. The attendance in Special and Short Courses was 2,152; the grand total attendance in all courses was 3,156.

ACADEMIC FUNCTIONS

Baccalaureate Service

The annual Baccalaureate Service for the graduating classes of the Ontario Agricultural College, the Ontario Veterinary College, and Macdonald Institute was held on Sunday, March 22, 1959, in War Memorial Hall. The Reverend Mariano di Gangi, B.S., B.D., B.Th., of St. Enoch's Presbyterian Church, Hamilton, delivered the baccalaureate address.

Graduation for Associate and Diploma Courses

Graduation exercises for the Ontario Agricultural College and Macdonald Institute Associate and Diploma Courses were held on Wednesday, May 13, 1959. The students were addressed by Mrs. J. H. Willson, B.A., of the Western Ontario Agricultural School, Ridgetown. Diplomas were presented to 42 graduates of the O.A.C. two-year Associate Diploma Course, and to 29 graduates of the Macdonald Institute one-year Diploma Course.

Convocation for Degree Students

The degree of Bachelor of Science in Agriculture was conferred on 109 students, and the degree of Bachelor of Household Science on 41 students at the annual convocation exercises held in War Memorial Hall on Friday, May 15, 1959. The degrees were conferred by Dr. Samuel Beatty, M.A., Ph.D., LL.D., F.R.S.C., Chancellor of the University of Toronto, and the convocation address was delivered by Dr. Claude T. Bissell, M.A., Ph.D., D.Litt., LL.D., F.R.S.C., President of the University of Toronto.

EVENTS OF THE COLLEGE YEAR

Farm and Home Week

The annual Farm and Home Week attracted more than 12,000 farmers, students, and other visitors to the College from June 8—12. The daily program featured bus tours of the campus and the College farm, a livestock parade, and floats demonstrating safety on the farm.

Annual Alumni Reunion

On June 20, more than 1,500 graduates of the Ontario Agricultural College and Macdonald Institute attended the annual reunion of the O.A.C. Alumni Association. The members of the Alumni Association at their annual meeting agreed to support the Alumni Scholarship Fund which seeks to obtain \$200,000.00 for entrance scholarships at the Ontario Agricultural College. A special feature of this year's reunion was the presentation to the College by members of Year '09 of a painting of the campus by the eminent Canadian artist, A. Y. Jackson.

Opening of the New Soils Building

The new Soils Building was officially opened on June 20 by the Hon. W. A. Goodfellow, Minister of Agriculture, and the Hon. Ray T. Connell, Minister of Public Works, in the presence of a large number of graduates and prominent Ontario farmers. Many distinguished soil scientists from across Canada joined in the opening ceremonies. A reception and dinner preceded the official opening, after which several hundred visitors toured the building.

New Department of Extension Education

In May 1959, the establishment of a Department of Extension Education was announced. The new department assumes resposibility for courses in extension for students and graduates, the development of training programs for rural groups and organizations, and the co-ordination of various short courses, conferences, and special schools both at the College and throughout the Province. The two-year Associate Diploma Course is now incorporated in this department of which Dr. N. H. High was named Head.

New Director of the Associate Diploma Course

In September 1959, Dr. Harvey Caldwell, formerly of the Department of Agricultural Economics, was appointed Director of the Associate Diploma Course, succeeding Dr. N. H. High, who was made head of the new Department of Extension Education.

Rhodes Scholarship

David Stager, a 1959 graduate of the Agricultural Economics Option, was chosen as one of Ontario's two Rhodes Scholars for 1960. He will study Philosophy, Politics, and Economics at Oxford University.

Rememberance Day Service

The annual Rememberance Day Service was held in War Memorial Hall on November 11, 1959, at 11.00 a.m., with a large attendance of the faculties and students of the three Colleges. The speaker was the Reverend G. D. Johnston, M.B.E., M.A., D.D. of Central Church, Brantford, who spoke on the subject "Why Remember?".

Address by British High Commissioner

Sir Saville Garner, the United Kingdom High Commissioner to Canada, addressed a large group of faculty and students on November 18, 1959, on the subject "Expanding Canada and a Growing Britain". The meeting was arranged by the local branch of the Agricultural Institute of Canada.

J. J. Morrison Memorial Lecture

The 1959 lecturer was Dr. W. C. Hopper, for ten years Commercial Minister at the Canadian Embassy at Washington. Dr. Hopper addressed a large audience in War Memorial Hall on the subject "A Decade of Canadian-United States Relationships". The lecture was attended by several members of the family of the late J. J. Morrison.

J. S. McLean Memorial Lecture

Professor D. Gale Johnston, of the University of Chicago, the third annual J. S. McLean Memorial Lecturer, visited the College in April. Besides conferring with faculty and post-graduate students in the Department of Agricultural Economics, he gave a public lecture on the subject "The Comparison of Canadian and United States Farm Policies".

European Directors General of Agriculture

A group of leading agriculturists from 14 European countries visited the College in November. They spent several days visiting the various departments to study the research being conducted at the College, and expressed themselves as being favourably impressed with both faculty and facilities.

Canadian Agricultural Extension Council

Directors of extension in agriculture and home economics from provincial Departments of Agriculture across Canada held their annual meeting at the College in June. The Chairman of the Council, J. Ernest Dube, of the Quebec Department of Agriculture, presided.

Death of Professor C. W. Riley

For 36 years a member of the Department of Agricultural Economics, Professor C. W. Riley died suddenly at his home on April 30, 1959. He retired on November 8, 1957, terminating an exceptional teaching career. A pioneer in the early cost-of-production studies, and a recognized authority on farm credit, his greatest contribution was undoubtedly in the field of teaching.

Death of Professor A. Leitch

Professor Archie Leitch, the first head of the Department of Agricultural Economics at the O.A.C., died in Florida on December 29, 1959, at the age of 77. A native of Cornwall, Ontario, Professor Leitch graduated from the O.A.C. in 1905, returning as a member of the faculty in 1915. In 1928, he resigned to found the Canadian Tobacco Growers Industry. He was president of the Dominion Farm Marketing Board under the Bennett Government, and Chairman of the Ontario Flue Cured Tobacco Growers Association until 1948, when he retired.

Death of Miss Catherine Isabella Millar

Miss Millar, who was a member of the faculty of the Dairy Department for 30 years, died September 12, 1959. She was one of the pioneers in the field of dairy extension, and her contribution in this field meant much to the industry.

Her work included the teaching of students of the Ontario Agricultural College and Macdonald Institute, and field work in Ontario, in Nova Scotia, and in New York State. She retired from the Department in 1943.

Distinguished Visitors

During the year a number of outstanding people in the fields of science, agriculture, and education were visitors at the College. Included in our list of distinguished guests were: Dean Hector Carberos of Buenos Aires; Dr. David Berlo of Michigan State University; Dr. H. C. Zindel of Michigan State University; Professor Thornton of Reading University, England; Dr. W. C. Hopper of the Canadian Embassy in Washington; Mr. Arnold Edinborough, Editor of Saturday Night; Dr. C. B. Baker of the University of Illinois; Sir Saville Garner, British High Commissioner, and Lady Garner; Dr. C. Brandis and Dr. Epsteen, South American veterinarians; Principal W. M. Mitchell of the Royal Veterinary College; Mr. A. H. Houghton and Mr. C. H. Crawford of New Zealand; Dr. Gale Johnston of the University of Chicago; Mr. J. C. Tedder of Ghana; Dr. Samuel Beatty, Chancellor of the University of Toronto; Principal and Mrs. F. C. A. Jeanneret of the University of Toronto; Mr. Donald G. McKenzie, Scottish Department of Agriculture; Dr. and Mrs. C. A. Lassiter of Michigan State University.

Groups and Conferences

During the year the College was host to more than 50,000 people representing every phase of the agricultural industry in the Province and in many other parts of the world. Among them were large numbers of young people of the Province, both rural and urban.

Over 1,000 Junior Farmers met at the College in June for their annual field day, and the annual Junior Farmers Conference in March 1960 brought 800 rural young people from all parts of the Province to the new Physical Education Building and War Memorial Hall. In July, 2,000 4-H Club members visited the College during 4-H Club Week. The Inter-Club Judging Competitions in October were attended by over 700 4-H Club members and their leaders. A 4-H Girls Conference in June brought 200 teen-age girls to the College. Approximately 1,000 high school students were the guests of the students on the campus on the occasion of the annual College Royal in March. Nearly 3,000 students from the four Teachers' Colleges in the Province visited the College during the second week in May. The Junior Farmer Drama Festival was held in War Memorial Hall in April, with more than 500 young people in attendance. High School students of the CWOSSA organization made their headquarters at the College, and many field days and sports finals were held in the Physical Education building and on the playing fields during the year, bringing thousands of high school students to the College. At various times, young farmers from Great Britain and Northern Ireland, Australia, New Zealand, South Africa, and Malaya were guests at the O.A.C.

The second annual Safety Conference in March 1960 attracted about 300 people to an enthusiastic meeting sponsored by the Ontario Departments of Agriculture and Transport. The first Soft Ice Cream Conference to be held in Canada brought over 200 operators to the Physical Education building in March; and the first Extension Course in Communications was also held in this building. The first annual Conference of the Ontario Secondary School Headmasters Association was held at the College in July, with 152 teachers and wives attending. The Federated Women's Institutes of Ontario held their annual convention in War Memorial Hall in May with an attendance of 650, and an additional 200 women visited the College on the occasion of the Women's Institute Holiday in July. Various summer schools for teachers brought over 300 teachers to the College for special courses during the summer. Nearly 1,000 livestock men, representing various

breed associations, met at the College for their annual field days during Livestock Week in June.

International groups included members of the Ninth International Botanical Congress, a group of Hereford breeders from England, New York Holstein breeders, a group of Russian agriculturists, and a delegation from Yugoslavia. In June the College was host to the convention of the Canadian Veterinary Medical Association, when the new Medical-Surgery building was opened.

Other groups holding meetings or conferences at the College during the year included the Ontario Beekeepers Association, the Ontario Farmers Union, the Ontario Conservation Council, the Farm Writers Association, the National Chinchilla Breeders Association, the Tenth Annual School for Rural Clergymen, the Conservation Council of Ontario, the National Soil Survey and Soil Fertility Committee, the Royal Canadian Golfing Association.

STUDENT ACTIVITIES

In its graphic presentation of the theme "Our College, Our Graduates, Our Country", this year's College Royal was distinctive. The club exhibits and various special displays were all centered about this theme. Of particular interest was a large collection of photographs of a select group of graduates ranging back over more than half a century and demonstrating in what a wide variety of occupations O.A.C. graduates have won distinction. Fine weather on Wednesday brought out an unusually large crowd of visitors including about 1,000 high school students. The entire series of "Royal" activities, beginning with the Ball on Saturday night and ending with the three-night run of the Curtain Call Revue, was carried out with marked success. The Union Literary Society again produced a talented team of debaters who won the Ontario Division of the Inter-University Debating League but lost the final decision to McGill University, winner of the Quebec Division. The president of the I.U.D.L. was an O.A.C. student. The J. Lockie Wilson Memorial Trophy for inter-year debating was won by Year '63 O.A.C. In drama an evening of one-act plays under student direction was presented in the fall term; in the winter term a film club was organized. The annual Public Speaking Contest for the Year '28 Prizes was held as part of the College Royal English Night. The Union Philharmonic Society arranged a series of Sunday Nine O'Clocks, and took part in the Inter-University Choral Festival which was held at the University of Toronto. As their Christmas offering, the Choral Club gave a repeat performance of Menotti's "Amahl and the Night Visitors" which had proved to be so popular the preceding year. The Student Christian Movement carried out its regular program of activities. The Union Council organized the regular series of fall and winter activities and developed a standard procedure to simplify the making of student awards in various branches of extracurricular acitvity.

Training for the Armed Services

Officer cadets were trained for the three Armed Services. Although the number of students taking part in these schemes was small the calibre of the participants, as a result of exacting selection, was high. The program was divided into two parts, the first being given at the College during the academic year, the second in training ships and establishments in Canada, the United States, Bermuda, and Germany, during the students' vacation period.

New Scholarships, Prizes, and Awards

Among the many awards and grants made during the year were the Cyanamid of Canada Limited grant of \$2,500.00 in aid of research work in the field of antibiotic potentiation with poultry; the Toronto Anglers' and Hunters' Association grant of \$2,000.00 for research on the problem of furunculosis of Ontario game

fish; the Distillers Corporation Limited, Montreal, grant of \$1,800.00 in aid of fermentation studies on thin silage; the Cyanamid of Canada Limited grant of \$1,600.00 to assist in furthering the work with urea on vegetable crops.

RESEARCH AND DEVELOPMENTAL ACTIVITIES

The following report records major accomplishments in research and allied developmental activities during the 1959–60 fiscal year.*

Soil Surveys

Soil surveys were made in Lanark County (300,000 acres) and Leeds County (188,000 acres), and a re-survey of 120,000 acres was made in Northumberland County.

A detailed soil survey of Halton County was initiated and about 30 per cent of the area was surveyed using aerial photographs (scale, 4 inches = 1 mile) as a base map.

Trace element deficiency areas in Southern Ontario have been mapped.

Chemical studies of soil profiles showed that the total phosphorus was greater in poorly drained soils than in the associated well drained soils.

Soil Fertility

The use of radio-active bromine as a means of measuring plant root sorption surface area was studied in greenhouse experiments. There was no relationship between root weight and bromine absorption. Apparently the absorption was affected by the physiological status of the plant. Hence, this method of measuring root sorption surface cannot be used in field studies.

In a greenhouse study it was found that, during the first three weeks of growth of oats, and at maturity, fertilizer phosphorus absorption was greatest when the fertilizer was placed with the seed. Between the three week stage and maturity, absorption was greatest from fertilizer placed 2 inches below the seed, or 2 inches below and 1 inch to the side of the seed. A better understanding of the nutritional requirements of oats at different stages of growth is required for interpretation of these findings.

The application of water extracts of beef manure, chicken manure, and alfalfa to the soil increased the uptake of manganese by soybeans. At high rates of application growth of the soybeans was reduced on soil culture, and eliminated completely on sand culture. This effect on growth was due to high salt concentrations in the extracts rather than to specific inhibitory substances.

On the basis of time-isotopic exchange studies in the laboratory, it was concluded that there are four reactions involved in the manganese equilibrium in soils. Release studies indicate a relationship between rate of release of soil manganese to water extraction and the reducible manganese content of the soil.

Isotopic exchange studies have indicated that aluminium phosphate in soils is the most readily exchangeable form, followed by iron phosphate and calcium phosphate. The activities of the aluminium and iron phosphate were a function of soil pH as measured in 0.01 M calcium chloride.

A method of measuring non-exchangeable potassium was developed. It involves storage of the soil and cation exchange resin mixture in water suspension for 48 hours and subsequent extraction of potassium with 0.1N ammonium acetate. Multiple regression analysis showed a much higher correlation of the 0.1N ammonium

^{*} The Ontario Agricultural College gratefully acknowledges the valuable co-operation of individuals and groups of federal, other provincial, university, and industrial research organizations.

acetate-exchangeable potassium and the non-exchangeable potassium (as determined by the resin method) with yields of several field crops, than did the exchangeable potassium alone. This resin technique may be incorporated in routine soil testing procedures.

An incubation test for measuring the nitrogen status of Ontario soils has been developed and correlated with crop yields. This test is now in use in routine soil testing.

Fertilizer requirement tables for the interpretation of nitrogen, phosphorus, and potassium tests made in the Soil Testing Laboratory have been prepared and distributed.

Fertilizer trials with oats on a field strip basis were conducted in several counties. It was found that fertilizer applied according to soil test for 90 per cent yield gave an average return over cost of fertilizer of \$4.05 per acre; fertilizer applied according to the general recommendations of the Fertilizer Advisory Board for Ontario resulted in an average loss of 83 cents per acre; and fertilizer applied on the basis of the estimate of the farmer resulted in an average loss of \$4.86 per acre.

In regional trials of factorial design, on different farms, fertilizer response was measured on six locations each for oats, corn, and hay. Yields of hay in the year following seeding were not affected by different fertilizer application at the time of seeding the oats companion group.

Experiments with potatoes showed that fertilizer placed in two bands below and to the side of the seed gave an average of 20 bushels per acre more than the same amount of fertilizer broadcast on the surface before planting. In another experiment, the use of sulphate of potash instead of muriate of potash had no effect on cooking quality but did increase the dry matter content of the tubers.

In field study, alfalfa seeded between rows of oats (14 inch spacing) resulted in larger seedlings at harvest of the oats than alfalfa seeded in the rows. The differences in seedling size were not reflected in yields of alfalfa in the year following seeding.

In a field study of several crop rotations on Haldimand clay, the seven year average figures show that, even at high rates of fertilizer application, manure treatment at 15 tons per acre in each four-year period gave an additional increase in yields of all crops in the rotations.

The muck soil in the Bradford marsh was found to contain a significant amount of clay which apparently has a marked effect on potassium availability and probably accounts, in part at least, for the wide seasonal fluctuations that occur in exchangeable potassium.

A four-year study of the effect of fertilizer placement for grain corn was concluded. With a total application of 800 lb. of 10-10-10 fertilizer, it was found that a starter application of 25 per cent of the total with the remainder broadcast resulted in the highest yields. Use of the placement planter did not give yields, higher than were obtained using the split-boot planter method of application.

Boron levels in soils in which rutabagas are grown were investigated in Bruce, Oxford, Waterloo, Wellington, and Wentworth Counties. In 23 fields in which brownheart was not encountered, the average pH was 7.1 and the available boron averaged 1.12 p.p.m. Similar records from 15 fields where brownheart affected the crop showed an average pH of 7.35 and available boron of 0.66 p.p.m. It is estimated that the available boron content of near-neutral soils should be 1.0 p.p.m. or slightly higher for rutabaga production.

Respiration studies were conducted on the Ao and B horizons of acid forest soils treated with limestone, superphosphate, and a combination of both, eight years

prior to sampling. Whereas the effects of the combination seemed to be additive, it was found that limestone encouraged leaching of the most readily decomposable organic matter into the B horizon, and superphosphate stimulated more complete decomposition in the Ao horizon so that less organic matter was carried down to the B level.

Studies of plots on acid forest soil under deciduous cover treated in 1950 with superphosphate, limestone, or a combination of both, indicated that these treatments raised soil pH and increased the numbers of nitrifying bacteria. Morphological studies of microorganisms isolated from soil under maple and pine cover revealed the presence of an acid-tolerant population of antinomycetes belonging to the Streptomyces and indicated that compared with agricultural soil, acid forest soils contain relatively few distinct types or species.

Continued studies of microorganisms isolated from composts have resulted in the isolation of three viruses capable of lysing certain strains of thermophilic actinomycetes. Phage antisera have been developed and are being employed for differential studies.

It was found that certain herbicides applied at recommended levels to Guelph and Fox loams exhibited no inhibitory effect on nitrification or carbon dioxide evolution. However, certain inhibitory effects were noticed when the compounds were applied at ten times the recommended level.

Soil Physics

For the years 1953-59 inclusive, variation in soil rainfall energy, calculated from rainfall intensity, amount of rain at each intensity, and the maximum 30-minute intensity, was the main factor causing variation in soil losses from May 1 to July 15 on a 7 per cent slope at the Hydrology Station. From July 15 to September 30, there was no relation between rainfall energy and soil losses because of the effect of vegetative cover.

Laboratory work using radioactive rubidium (Rb86) in soil has shown that

cation diffusion in soil is reduced as the soil tension is increased.

In a field study of corn crop, it was found that when the soil was moist practically all of the net solar radiation was used to evaporate water from the soil and crop surfaces. There was no apparent affect of stage of development to maturity of the corn plant on the ratio of evapotranspiration to net radiation. Hence, the net radiation is superior to the Thornthwaite method of predicting evapotranspiration.

Irrigation and Hydraulics

The vinyl plastic lining material installed in 1956 in an irrigation pond at the Canada Department of Agriculture Research Branch Tobacco Sub-station at Delhi is showing serious deterioration, and was patched in 40 places during 1959. Some of the damage was due to mechanical causes, but the major deterioration is suspected to be the result of exposure to ultraviolet light, since there is no earth covering on the plastic.

A rain gauge network, of one per square mile, was established in the Guelph area in co-operation with the Meteorological Service of Canada. During 1959, rainfall variations of up to 130 per cent between stations, for the same storm, were recorded, and variations of 5 per cent between shielded and unshielded gauges at a single station were observed. A storm on July 29 gave rainfalls of over 4 inches to three stations in the network. This rainfall was one of the greatest intensities, for a storm of one-hour duration, measured in Ontario.

Water level studies in relation to irrigation and to functioning of the tile-bed system are continuing at the Muck Research Station.

Drainage

The tile drains installed at the Muck Research Station in 1957 are still in a satisfactory state. The cover material of fibre glass has not deteriorated.

Several measurements on hyraulic conductivity were made on the Station by the auger hole method. The average value of the hydraulic conductivity was 0.81 of an inch per hour at a depth of about $2\frac{1}{2}$ feet.

Continuous drain overflow and rainfall measurements were made at a test site near Merlin, Ontario, from April 6 to November 11, 1959. There were 13 separate tile run-off periods with no exceptionally large rates. The maximum drainage rate was 0.2 of an inch per 24 hours as result of a one-inch rainfall. Antecedent moisture conditions are very important in determining the drainage rate as a result of particular storm.

CROPS

General

Filed crop recommendations for the different climatic regions of Ontario were revised on the basis of regional trials and published.

Forage Crops

Three new forage grass varieties proved sufficiently superior to be placed on the recommended list. Sartoga brome is superior to currently used varieties in early spring growth and often in recovery growth in mid-summer. Hence, it is recommended for pasture mixtures where distribution of production throughout the season is important. Because of its aggresiveness in mixtures, it is recommended for use in mixtures with Du Puits-type alfalfa varieties. Frode orchard grass is slightly later in maturity and leafier than Common orchard grass. An extremely late orchard grass, S-143, is recommended for use on part of the pasture acreage in Zones 1 to 3 to facilitate grazing management.

Hay-pasture recommendations for soils, fair but variable in drainage, were revised, based on the results of a series of federal-provincial trials over the past three years. Birdsfoot trefoil-timothy mixtures were added, and alfalfa based mixtures were simplified. Birdsfoot trefoil-timothy was placed on the recommended list for both pasture and hay.

Interactions among variety, date of cutting, frequency of cutting, and fertility level were studied in relation to yield and persistence of alfalfa over a four-year period. In the second crop year, variety was the major factor causing yield and persistence differences, and these resulted in differences in winter survival. Bacterial wilt reaction related to variety became the dominant factor determining persistence in the third crop year. Varieties differed in their response to potash and phosphorus applications. Phosphorus helped the winter-hardy varieties more than the non-hardy, whereas potash was of greater benefit to the winter-susceptible varieties. A utilization system involving a cutting in September was detrimental to all varieties, but particularly to the less hardy ones. Only with the hardy varieties was it feasible to attempt to compensate by the addition of fertilizers for the mismanagement in untimely cutting.

Variability among seed lots of pedigreed and non-pedigreed alfalfa in relation to winter survival showed the superiority of pedigreed seed. Pedigreed lots of Vernal and Ranger were consitent in performance, whereas the non-pedigreed seed lots of these varieties varied in performance. Sufficient variability was present among lots of non-pedigreed Canadian Grimm to make it too unreliable in performance to be suitable for farm use.

Higher seed yields of Redon red clover were produced from the aftermath

following an early hay crop than from the first crop itself. Red clover-timothy mixtures produced more hay in June and more seed from the aftermath than did pure stands of red clover or red clover-bromegrass mixtures. Seeding rates of 3, 6, 9, and 12 lb. per acre had no effect on red clover seed yield but did affect hay yield. With 2 lb. of timothy, no increase in hay yield was obtained with red clover seeding rates of 6 lb. per acre. Red clover alone produced more seed per acre than red clover-timothy or red clover-brome mixtures when seed was harvested from the first crop. First crop seed was higher in seed weight than second crop seed.

Three different responses were found in the movement of red clover leaflets with respect to light and darkness: (1) a direct response to light or darkness, seen by rapid opening or closing of the leaflets when the conditions changed; (2) an endogenous response to the more recent light or dark experience when the leaflets are moved into the opposite condition; and (3) a response to a basic endogenous rhythm that occurs when a plant is placed in continuous darkness or light for at least 24 hours. When moved into the opposite condition, leaflets will open or close with the peak responses in the middle of the former light or dark period.

Tests were conducted on 104 commercial powder-type legume inoculants. Of this number, 11.5 per cent were found to be unsatisfactory on the basis of low counts of viable root nodule bacteria per gram of powder. Twenty-two per cent of the alfalfa-clover group were unsatisfactory, and, of this group, 42.1 per cent of those registered under one trade name were classified as unsatisfactory. Contamination in the cultures varied from 8 to 84 per cent, and consisted mainly of actinomycetes.

Other Field Crops

A machine developed to permit plowing and planting of corn in the furrow slice in one operation was tested on seven farms in Western Ontario. In comparing results with corn planted in the conventional manner on the same farms, it was found that the plant population and yield of grain corn was significantly lower for the corn planted with minimum seed-bed preparation. The difference in yield could be accounted for almost entirely by the lower plant population.

The evaluation program on corn hybrids produced by commercial companies resulted in the recommendation of six new hybrids for Ontario.

The Ontario Oat Project Group released a new variety of oats, Russell, to 35 Elite Growers in the Province. This variety is equal to Garry in yielding ability, produces better quality grain, and has greater tolerance to the Septoria disease which causes considerable stem breaking in Garry and Rodney oats.

Silage corn made from relatively mature corn has proved to be a more acceptable feed on both beef and dairy farms in Ontario. Tests have shown that the best moisture content for ensiling corn is approximately 70 per cent. The corn plant reaches this moisture level about 10 days before full maturity. At this stage, the corn kernels are well dented and firm. The yield components of well-grown corn show that 50 per cent of the yield is in the ear. Since corn ears have much higher feeding value than the stalk, the use of earlier-maturing corn will produce silage of much higher feeding value and a greater feeding range.

Sorghum hybrids have been suggested as an alternative silage crop for corn. Results have shown that sorghum is lower yielding, with a much higher moisture content at harvest.

Tree and Small Fruits

Naphthaleneacetamide (N-amide) was applied as a thinning spray at different rates and times to replicated plots of McIntosh apples. Naphthaleneacetic acid

(NAA) was used as a standard for comparison. The results, determined by blossom counts, showed that the 75 p.p.m. of N-amide rate, at petal fall was most effective. The accumulative fruit drop until harvest corresponded to the degree of thinning.

Plants of the strawberry variety Pocahontas were subjected to the following treatments during the winter of 1958–59: (1) chloroethanol vapour for 2 hours at 1 c.c. of chemical per 1,500 c.c., (2) chloroethanol vapour for 2 hours at 2 c.c. of chemical per 1,500 c.c., (3) gibberellic acid spray of 100 p.p.m., and (4) a temperature of 34°F for 5 weeks. Control plants did not commence growth during the experimental period, but the low temperature plants made good growth. The gibberellic acid treatment promoted elongation of peduncles and petioles but did not appear to break the rest period. Many plants were injured by the chloroethanol treatments and neither rate was effective in breaking the rest period.

Excessive runnering in a strawberry variety is considered detrimental to optimum yields. Selections in inbreds have been made for low runnering ability. June-bearing and everbearing inbreds and F₁'s of combined inbreds have been obtained for a wide range of runnering ability, from no runnering to excessive runnering.

Tests with virus-free strawberry plants at the Muck Research Station have

given encouraging results.

Scarified raspberry seeds soaked for 72 hours either in a 100 p.p.m. gibberellic acid solution or in water containing Tween 20 germinated as well as scarified seeds stratified for one month at 34°F. Unscarified seeds did not respond to the gibberellic acid or the Tween 20 treatment when stratified.

Tomatoes and Vegetables

In the population analyses of 94 tomato varieties and hybrids at Collingwood, in 1959, three varieties and seven hybrid lines were outstanding. One of the latter, an F₅ selection of Harrow x Striped Mutant, was introduced to the trade as Tanggula. It has a high external and internal colour rating, is resistant to blemish, and possesses the "concentrated maturity" characteristic. A half-wild cross of Campbell Soup 128 x Philipino No. 2 has exceptionally high colour and will set fruit at 45°F, a temperature of 10° below normal for tomatoes.

Development work was carried out on a tomato harvester. The machine consisted of rubber rollers to remove the tomatoes from the vines. Tests on staked, single-vine plants in the greenhouse showed that the principle was highly successful in removing fruit with a minimum of bruising. However, since the "concentrated maturity" canning tomatoes are likely to be of the multi-stemmed type, this principle will probably not have an application in the industry.

Water-imbibed tomato seed was subjected to various temperatures and durations of exposure. This vernalization provided no obvious pattern of effect, but alternating high and low temperatures did tend to increase flower numbers per cluster. Increases or decreases in number of nodes to first flower cluster were not associated with flower number in the cluster.

Ring culture of greenhouse tomatoes was compared with standard soil-bed culture. Yields were not affected nor was the incidence of physiological disorders, but ring culture provided significantly fewer small-fruits.

Folair application of nitrogen, in urea form, did not increase yield of field-set tomato and pepper crops. Tomato yields were increased when 700 lb. of nitrogen per acre were applied before transplanting and 33 lb. per acre as side-dressing. Peppers yielded best when urea was applied before transplanting at 103 lb. of nitrogen per acre.

Direct seeding trials of Glamour and Fireball tomatoes, on May 12, showed direct seeding to be superior to normal transplanting by 1.6 tons per acre. Fruit

from direct-seeded plants were slightly smaller but had fruit colour of an Angstrom E value of 50.4, which is excellent.

The Hydrop Hybrid pickling cucumber, introduced in 1952 as resistant to cucumber mosaic, was replaced in 1956 with a strain that also included spot-rot (pox) resistance. In 1957 it was found that this strain would not resist virulent strains of spot-rot, but in 1960 an improved disease-resistant Hydrop Hybrid will be introduced. It is highly resistant to mosaic and spot-rot, but is moderately susceptible to bacterial wilt.

An investigation of factors affecting quality of early potatoes in the Essex-Kent area showed that mechanical harvesting and packing operations coupled with lack of care on the part of the handlers resulted in 17 per cent bruising, and up to 70 per cent skinning oftubers. Two-thirds of the damage occurred after harvest, during mechanical grading and packaging. Waxing and anti-oxidant chemical treatments were ineffective in retaining tuber quality. It was concluded that, (a) rubber protectors on harvesting and grading equipment, (b) care in handling, and (c) use of rigid containers would do much to improve the tuber quality and consumer reaction to this crop.

In the carrot breeding program, progeny of inbred and F₁ material yielded several hybrid lines that appear to have commercial promise, but which require further selection or breeding. Refractometric analyses on all roots, together with records on cracking, root and root shoulder colour, root penetration, and male sterility, showed that wide differences existed, particularly between lines. About 600 hours of below 50°F temperature are necessary to induce flowering in carrot lines already carrying and inherited character for premature flowering. Devernalization may take place if hot weather occurs early in the season, and 50°F has been established as the most satisfactory threshold temperature for flower induction.

A lettuce breeding program has been initiated and several species have been crossed with *Lactuca sativa* to investigate progeny resistance to aster yellows and rootrot. A large seedling population will be screened in 1960.

Experiments were performed to determine the rate at which plant leaves could absorb growth inhibitors. Maleic hydrazide amine (2,500 p.p.m.) was applied in late August to vines of Huron and sebago potatoes. Vines were cut at post treatment intervals of 0, 2, 4, and 8 hours; daily 8 days; and after 11, 14, and 22 days. The very small amount of absorption possible in 2 hours allowed 4 p.p.m. residue in tubers and slightly increased length of sprouts after the rest period ended. Twenty-four hours was sufficient time to allow sufficient amine absorption for adequate inhibition of sprouting from a commercial standpoint; and almost complete sprout inhibition resulted when absorption was allowed for 48 hours. It increased in linear fashion to a maximum of 36 p.p.m. after 7 days of absorption. Intervening rainfall did not interfere with absorption rate or amount.

Flowers

Rose Charm gladiolus corms were stored for seven months in open trays, ventilated cellophane bags, and sealed polyethylene bags. In all, 16 temperature conditions were used, and three planting dates at seven-day intervals. Corm weight losses increased directly with ventilation of the container and with the temperature of storage. Storage at 30°F froze corms, but 30°F and 40°F alternation did not. Storage temperature did not affect emergence date, blooming date, or weight of corms produced; but storage at 35°F to 45°F improved inflorescence quality significantly, and resulted in larger new corms than those from corms stored at higher temperatures. Planting date influenced emergence, the latest planting resulting in earliest emergence. Earliest planting resulted in best quality inflorescences and significantly larger new corms. Polyethylene containers, although inhibiting weight

loss during storage, delayed plant emergence, and reduced weight but not size of new corms, but did not affect bloom quality.

Thirty-seven new seedlings of gladiolus were grown, under co-operative test. Only one received an A rating.

In the lily breeding program, two new varieties were selected for trade introduction. In line with recent policy, these were given avain names, viz. Skylark and Redstart. The former is lemon-yellow and outward-facing. Redstart florets are a deep rich red. Both form tall plants with many florets and form bulbils in stem leaf axils.

The presence of a growth reduction principle was found in chrysanthemum roots, and its dwarfing effects were mitigated by steam and methyl bromide soil treatments. The growth reduction principle apparently does not affect the reproductive cycle of the plants. Attempts to extract and transfer the growth factor to rooted cuttings on developing chrysanthemum plants were unsuccesful. On the other hand, water extracts of chrysanthemum roots had a pronounced inhibitory effect on germination and seedling development of lettuce and chrysanthemums. This inhibitor was water soluble and heat stable, but no further evidence was obtained as to its identity or relation to the vegetable growth reduction principle.

Nursery Stock

Nursery plants grown in containers and fertilized in varying ratios responded best to a 1-1-1 ratio. A positive species-fertilizer ratio interaction was anticipated and observed. Poorest fertilizer was that highest in nitrogen, i.e. 3-2-1 ratio. Growth records also indicated that a partial shade effect, provided by glass fibre screening, was superior to conventional lath shading or no shading. Relative humidity was one per cent higher under glass fibre than under lath, and temperatures were consistently lower by 1 or 2°F. Growth improvement appeared to be better under glass fibre than the small relative humidity and temperature differences would be expected to cause.

When herbaceous perennials and rooted woody cuttings were grown in 1:1 sand:peat medium in papier maché and metal containers, the metal containers produced superior plants. In papier maché, better plants resulted when the containers were set on gravel rather than on black polyethylene. When Jiffy pots were used as containers, they remained intact throughout the entire growing season, and appeared to have most value where plant sales would be spread through the whole season.

Virus-free nursery stock was tested at the Muck Research Station with encouraging results.

Turfgrass

The nutrition of five turfgrasses was investigated. Sources of nitrogen were urea-formaldehyde, urea, ammonium nitrate, and ammonium sulphate. Single and split applications were made at various dates. Urea and urea-formaldehyde proved superior to the other sources. Urea, in four applications, induced significantly greater clipping weights in July, August, and September, than did other treatments. In May and June the single urea application was best. Colour was consistently superior on the plots receiving urea.

LIVESTOCK

Breeding

Sire summaries for type, including all registered sires in Canada of the four main dairy breeds with 10 or more officially classified daughters, were studied

during the year. This involved the processing of approximately 60,000 individual cow classification records, Fifty-seven per cent of the Ayrshire bulls had progeny groups better than the breed class average of 60 per cent "Good Plus and Better". The sire groups ranged from 8 to 100 per cent "Good Plus and Better", indicating large differences in the breeding value of the bulls that are being used throughout the country. Seven hundred and four Jersey sires had a final rating average of 83.7 score values, ranging from 75.7 to 88.9. The Guernsey report included 179 bulls with an average score of 80.2 for final rating, ranging from 75.5 to 85.6. Approximately 500 Holstein sire groups were summarized on the basis of type.

A sire summary has been completed on 500 bulls of all dairy breeds. These are all of the bulls with 10 or more two-year-old daughters with completed Ontario D.H.I.A. milk records. The summaries are prepared on a within herd and year contemporary comparison basis which is one of the most accurate available methods for sire approval appraisal.

A summary of the official type records of 25,759 Jerseys classified between 1941 and September 1959 has been completed, and the breed averages for the different sections of the type score card were determined. The breed average for final rating, based on the total number of cows, was 83.7, with the per cent distribution among the different type grades being: Excellent, 5.9; Very Good, 44.1; Good Plus, 38.8; Good, 10.3; Fair, 0.9; and Poor, 0.0. In general, all of the type components have a fairly high average score. However, from this summary, it appears that Dairy Character and Body Capacity are the strongest points, with Legs and Feet, and Fore Udder, the weakest.

The Guernsey summary was based on 6,095 cows that had been classified on the most recent score card. The percentage of the cows that were placed in the top three grades, namely, Excellent, Very Good, and Good Plus, for each of the score card sections is as follows: Final Rating, 54; Head and Neck, 74; Shoulders, 61; Feet and Legs (F), 81; Feet and Legs (R), 58; Rump, 58; General Appearance, 62; Dairy Character, 82: Body Capacity, 85; Mammary System, 52; Udder (F), 56; Udder (R), 56; and Teats and Placement. 59. The strong points are Dairy Character and Body Capacity, but Mammary System and particularly Teats and Placement are the weakest. The average score for final rating was 80.2.

Variations in the daily milk and butterfat production of Ayrshire, Holstein, and Jersey cows have been studied. Holsteins, with an average daily variation of 1.82 lb., were significantly more variable than the two breeds. Ayrshires and significantly different. Variation was lowest in the first lactation of all breeds and Jerseys, with average daily variations of 1.29 and 1.35 lb., respectively, were not progressively higher thereafter. Differences in variability between months within lactations were highly significant, with the variation being most extreme during the first month of lactation. Correlations between level of mean yield and variability were calculated within lactations and breed. These were highly significant, supporting the conclusions that the higher producing cows within a breed were also the most variable in daily production.

Two methods of standardizing milk production records by correcting for age differences, viz. the Mature Equivalent System, commonly used in the United States, and the Breed Class Average System, used only in Canada, appear to be of equal reliability. This conclusion was reached following the determination of heritability of both milk and butterfat by the paternal half-sib correlation method on the same records standardized by the different methods. The heritability figures obtained were: Breed Class Average—Milk 0.21, Mature Equivalent—Milk 0.20; Breed Class Average—Fat 0.22, Mature Equivalent—Fat 0.17. The two values for milk are essentially the same, indicating that both methods for standardization are equally correct for age differences. The values for butterfat yield, although showing a difference of 0.05, are of the same order.

A study involving type and production records of 9,469 two-year-old Holstein cows was completed. The part of the study dealing with the relationship between type characteristics and production revealed phenotypic correlation coefficients, when analysed on a within herd and sire basis:

	Breed Class	Breed Class	Mature Equivalent	Mature Equivalent
Type Component	Average - Milk	Average Fat	Milk	Fat
Final Rating	0.23	0.21	0.20	0.20
General Appearance	0.17	0.17	0.17	0.16
Dairy Character	0.26	0.27	0.27	0.27
Body Capacity	0.12	0.14	0.11	0.11
Mammary System	0.23	0.21	0.20	0.20
Fore Udder	0.18	0.19	0.17	0.21
Rear Udder	0.20	0.21	0.17	0.20
Feet and Legs	0.07	0.06	0.06	0.05
Rump	0.05	0.04	0.04	0.04

All correlations were positive, ranging from 0.04 between rump and both milk and fat production to 0.27 between dairy character and milk and fat production. The lowest correlations were between rump and production, and feet and legs and production, while the highest correlations were between type characteristics, dairy character, final rating, and mammary system, and production. These correlations show that good type and good production as compatible and can be combined in the same animal.

One hunderd and sixty-nine sales of registered Holstein cattle for the period January 1955 to December 1957 have been partially processed. Data are available on 9,234 head, sold in these sales for an average price of \$296.92 per head. Each individual sold has been categorized according to the following classification: (a) type classification of sale female, (b) type classification of sire and dam, (c) milk and fat production of dam, and (d) milk and fat proof of sire. To date the raw means have been isolated to indicate trends of price but no further analysis has been completed. It has been found that considerable emphasis is placed on the type of the sale individual, as well as on her merit as a producer of milk and fat, and to the merit of the sire and dam with regard to both type and production.

The collection of performance data on weights of individuals in the College beef cattle herd has been continued. Average values are as follows:

Breed	Sex	Birth Weight	Weaning Weight (7 Months)	8 Months' Weight	14 Months' Weight
		lb.	lb.	lb.	lb.
Shorthorn	Male	64	490	556	935
	Female	62	440	489	695
Hereford	Male	68	467	524	863
	Female	59	454	505	702
Aberdeen Angus	Male	66	466	537	820
	Female	57	424	463	665

Growth and carcass characteristics of 241 steers fed under uniform conditions from 7 to 13½ months of age have shown the following: initial weight — 457.5 lb.; final weight — 880.5 lb.; average daily gain — 1.9 lb.; grain consumed per day — 11.6 lb.; hay consumed per day — 7.7. lb.; grain required per lb. gain — 4.1 lb.; cold carcass weight — 465.9 lb.; dressing percentage — 57.6; carcass score — 66.9; total carcass length — 69.9 in.; length of side — 44.0 in.; length of hind leg — 25.6 in.; weight of hind quarter — 234.1 lb.; percentage of carcass in hind quarter — 50.2; area of longissimus dorsi muscle — 8.63 sq. in.; area of longissimus dorsi muscle per 100 lb. carcass — 1.89 sq. in.; area of fat in cross section at 12th rib — 20.5 sq. in.; percentage of fat in cross section — 44.0.

The first summary of 1,281 reports on bulls tested under Ontario Advanced Registry policy was prepared. The average daily gains ranged from below 1.5 lb. to over 3.5 lb., starting weight at 8 months of age ranged from below 450 lb. to over 850 lb., and final weight off test at 13½ months of age ranged from below 750 to over 1,300 lb. The grain consumption of 216 bulls, tested under station conditions, ranged from 2.5 to over 7.0 lb. for each pound of gain. Sire summaries on 84 bulls with 5 or more tested progeny were prepared. The average daily gain of groups ranged from 1.95 to 3.09 lb. All results obtained from the Advanced Registry Test Station, from the start of beef bull testing, have been standardized and placed on I.B.M. cards.

A summary of all records kept on a herd of Large White pigs, established in 1951, gave the following data: average birth weight — 2.9 lb.; average weaning weight (8 weeks) — 32.1 lb.; average weight at 154 dys — 151 lb.; and days to reach 200 lb. weight — 176.

Three sows and one boar, all exhibiting the abnormality atresi ani, have been successfully reared to breeding age. Matings have been made to determine the characteristics of inheritance of this condition.

Nutrition

Observations on parenteral copper therapy (400 milligrams of copper glycinate in a cerate, providing 120 milligrams of copper per dose) were continued with a herd afflicted with hypocupremia. Prior to 1959 the animals had been fed copperized mineral and a marked improvement in serum copper had been found. Four months after each intramuscular injection of copper glycinate, the serum copper had dropped to low levels, again showing that, in this area, parenteral therapy, three times a year, is inadequate. Ten sheep maintained on this farm for a year did not develop hypocupremia, but four calves pastured on another farm in this area developed the condition in six months.

Experimental silos were filled with kale, kale and barley, and kale and green corn. There was considerable seepage from the silos filled with kale alone. Spoilage was highest with the mixture of kale and corn, with negligible amounts in the others. Dairy heifers fed these silages rejected considerable amounts of the kale alone, but the other types appeared to be quite palatable. Freezing was evident in all silos but was particularly troublesome with the kale only.

Thirty Hereford steers were fed a ration high in corn silage (over 40 lb. per steer per day). The average daily gain on hay, silage, and grain was 2.30 lb. per day; and with the same ration, steers, implanted with 30 mgm. of stilbestrol, gained 2.71 lb. per day. Cost of gain was considerably reduced by using large amounts of corn silage in the ration.

Sixteen Hereford and 16 Charbray-Hereford cross-bred steers, averaging 550 lb. initially, were used in a trial comparing the effect on each group of feeding 2.5 mg. of hydroxyzine per head per day and the effect of re-implanting with 36 mg. of stilbestrol after 100 days on feed. The average daily feed intake over the 196 day feeding period was 6 lb. of mixed hay, 15 lb. of corn silage, and 8 lb. of grain. The cross-bred steers gained significantly faster than the Herefords (2.39 versus 2.19 lb.) and had a significantly larger area of eye muscle (10.42 versus 9.69 sq. in.). The selling price of the cross-bred steers was two cents per pound less than for the Herefords (23 versus 25 cents). Feeding the hydroxyzine significantly increased gains during the first 100 days (2.17 versus 1.95 lb.), but not over the whole period. Re-implantation of stilbestrol did not significantly increase gains and did produce some undesirable side effects.

In another trial, no significant differences were observed in performance

characteristics of steers receiving stilbestrol implants as compared to estradiol-progesterone implants.

Stilbestrol treatment of heifers had no significant effects on gains or fertility.

Ninety-three calves in 12 beef herds in the Shelburne area, in which muscular dystrophy has been edemic, were fed 2,000 I.U. of d-alpha tocopherol acetate (water-dispersible vitamin E) as soon as possible after birth, and a similar dose one week later. A few calves, on two farms where particularly severe outbreaks had occurred, were given a third dose. Seventy-three calves were used as controls. In the treated group, 3 developed muscular dystrophy and 1 died. In the control group 16 developed dystrophy and 5 died. From this field study, it appears that high levels of water dispersible d-alpha tocopherol acetate are effective in the prevention of muscular dystrophy.

Intramuscular injections of iron into baby pigs of the order of 200 mg. increased weaning weights and hemoglobin levels, and satisfactorily controlled anemia. This method allows a marked saving in time and labour over the oral method of administration.

Results based on individual feeding of 36 Yorkshire gilts indicate that higher energy levels in the ration resulted in lower carcass grades. The differences were highly significant. The higher levels of energy gave carcasses with more fat and a smaller loin area. The effects of protein levels were non-siginficant. High levels of energy and protein resulted in maximum daily gain and feed efficiency. High energy, particularly with low protein levels, produced fat carcasses. Low energy, at all protein levels, reduced average daily gain and feed efficiency but produced a desirable carcass. Considering all factors, the calorie: protein ratios which will produce an economical and an acceptable type of carcass are, approximately: 55.6:1 from weaning to 75 lb., 62.5:1 from 75 to 125 lb., and 71.4:1 from 125 to 200 lb.

Two trials with 32 Yorkshire gilts, and one trial with 12 Yorkshire gilts, were conducted to determine the effect of feeding corn silage to bred swine. Four levels of silage, 0, 3, 6, and 9 lb. per day were fed to various sows, up to the 10th day of gestation. Change in average daily gain per unit change in silage intake was very similar for all trials, the reduction being 0.08 lb. for each 1 lb. increase in silage fed per day. All sows reproduced satisfactorily with no significant differences in litter size, or weights at birth, at 3 weeks, and at 6 weeks. The use of 9 lb. of corn silage per day to replace a portion of the basal grains, in sow gestation rations, reduced feed costs by 12 per cent. The energy intake was reduced but protein, minerals, and vitamins were present at recommended levels.

Housing and Management

Tests were carried out to determine the strength of timber joints made with $2\frac{1}{2}$ in. diameter split-ring connectors and $\frac{3}{4}$ in. Douglas fir plywood gussets. It was found that the joints were not as efficient as similar connections using solid timber splices. It was concluded that $\frac{3}{4}$ in. plywood gussets should not be used with $2\frac{1}{2}$ in. diameter split-ring connectors.

Techniques have been developed using photo-electric methods and electric strain gauges for investigating the collapse mechanism of timber beams subjected to flexural loads. These techniques are to be used to formulate stress-strain relationships of timber beams in tension and compression. It is hoped that these procedures will provide the basis for more economical timber contsruction.

After investigations which proved a milk-metering device (the Milk-O-Meter) to be satisfactory from the standpoint of variation and accuracy, the wearing ability has been studied. Monthly checks reveal only insignificant variations to date.

POULTRY

Breeding

A strain-crossing program, involving egg production stock, identified two strains which will combine well for increased egg production. Reciprocal selection is being used to increase this combining ability.

Studies in the relationship of qualitative and quantitative traits in boilers have established that certain combinations of plumage colour increase the rate of growth, while others impede it.

A crossing program, involving varieties of different sizes of turkeys, showed that turkey broilers could be produced more efficiently by crossing varieties than by using the standard Small White variety in the pure state. Furthermore, certain crosses showed extreme heterosis, growing considerably faster than the faster growing parent variety.

Studies to determine inherited characteristics in fowl by serological methods have been continued. Isoimmunizations have been performed in inbred-pedigreed birds of four breeds of chickens. Serum absorption tests have been conducted to eliminate interfering cross reactions by preparing material capable of detecting only specific blood group antigens.

Nutrition

Addition of 2.5 per cent of meat meal, fish meal, or dried whey to diets throughout the lifetime (36 weeks egg production) of incrossbred egg strain pullets did not give significantly better growth, feed efficiency, or reproductive performance than "all-vegetable" diets. Furthermore, there was no significant carry-over effect of the unknown growth factor in the hen diet on the growth or feed efficiency of the progeny.

The reproductive performance of pullets was essentially equal whether they were fed, during the growth period, on high energy diets free-choice, these diets diluted with 20 per cent sawdust, fed free-choice, or fed on the high diets restricted, on a daily basis, to 80 per cent of the feed consumed by the sawdust-fed groups.

During a 24-week egg production period, results indicated that a laying diet containing 0.2 per cent inorganic phosphorus maintained body weight as well as a diet containing 0.47 per cent inorganic phosphorus. Egg production and feed efficiency of the pullets fed the low phosphorus diet were superior to those of the pullets fed the high phosphorus diet.

In a study designed to determine the effect of zinc and fluorine on egg shell quality it was found that supplementing the simplified wheat, soybean oil meal diet, containing 38 p.p.m. of zinc and 3.1 per cent calcium, with 100 p.p.m. of zinc or 12.5 p.p.m. of fluorine, did not improve shell quality, egg production, or egg weight. The birds used in this test had been in production for 10 months and had been fed diets containing 38 p.p.m. of zinc and 2.4 to 2.8 per cent calcium. The egg shell quality of the birds fed the diet with 3.1 per cent calcium was improved to its previous status when the diet contained 2.4 to 2.8 per cent.

The inclusion of 30 grams per ton of ascorbic acid to simplified wheat, soybean oil meal diets containing either 1.0, 2.5, or 4 per cent calcium, did not improve shell quality. The birds used in this experiment had been in production for 12 months before supplementing of the diets with the vitamin. However, the environmental temperature was maintained at 75–80°F at all times.

The absorption of tocopherols by chicks was markedly reduced when the tocopherols were ingested with high levels of fat.

A continuation of studies on the conversion of carotene to vitamin A in the ligatured duodenum of the living chick has confirmed the rapid formation, within 5 to 15 minutes, of vitamin A from beta carotene in that site, and has provided evidence of the formation of at least one intermediary compound the conversion.

Metabolizable energy investigations with chickens using the chromic oxide index technique have revealed that some factors, including the level and nature of protein sources and the presence of cellulose in the ration, may influence the energy values found for various grains and fat supplements, with the result that such values are not additive. Much more study of such influences, as well as of the method of metabolizable energy determination, will be required to ascertain the value of metabolizable energy data as measures of available energy in poultry feeds.

Findings of the previous year that a "new process' sunflower seed oil meal produced by a solvent process was superior to "expeller" meal was confirmed. A practical chick starter diet formulated with solvent processed sunflower seed oil meal required supplementation with not less than 0.2 per cent L lysine to make it equivalent to a similar diet based on soybean oil meal.

A study to determine the effect of different antibiotics, fed at different levels, on the growth and feed efficiency of chicken broilers showed that the antibiotics did not improve growth or feed efficiency above those of birds on a basal diet containing no antibiotics.

Studies to determine the relative value of feather meal, soybean oil meal, and meat meal in chick diets indicate that, on a pound for pound basis, and in the range of 3 to 6 per cent levels of supplementation, feather meal was capable of about 50 per cent of the growth- and feed-promoting activity of meat meal, and less than 50 per cent of the activity of soybean oil meal.

Analysis of feather meal used in the above experiment showed that it contained 100 p.p.m. of zinc. A second experiment, designed to check whether the growth-promoting activity of the meal was due to the zinc, indicated that this element is not a major factor in the growth-promoting activity of the product.

Experiments to determine the relative need for supplementary zinc in corn versus wheat diets showed that an improvement in growth was obtained by supplementing the corn diet with zinc, while little or no effect was demonstrated with the wheat diet. Analyses of the grains used in the experiment showed that wheat is not always higher in zinc content than corn. There is also the possibility that the availability of zinc varies from sample to sample of the same grain and between grains.

Studies on the "wheat factor" indicated that the effect was not due to differences in the fat content of the basal diets, since it was evident when the fat content of all diets was kept constant. The evidence also indicated that the growth-promoting activity of wheat ash was due entirely to zinc. Ontario wheat proved to be as potent a source of the "wheat factor" as Western wheat.

An experiment was designed to determine the influence of chlortetracycline on the requirement of turkey poults for pantothenic acid. The results indicated that as the level of the antibiotic in the diet was increased from 0 to 50 to 100 to 200 p.p.m. the growth and feed efficiency responses to increasing levels of pantothenic acid decreased. The results suggested that in the presence of 200 p.p.m. of chlortetracycline it may be detrimental to increase the level of pantothenic acid above that present in natural feed ingredients. The growth responses were supported by bacterial analysis of the cecal microflora. In those groups in which weight increased, the numbers of lactobacilli and enterococci groups of microorganisms decreased while the coliform group increased. Where weight did not increase, the opposite effect on these microorganisms was observed.

Implanation with diethylstilbestrol improved weight, but not feed efficiency, in turkey poults. Carcass finish was improved also.

The inclusion of a tranquilizer, hydroxyzine, in turkey growning diets depressed both growth and feed efficiency in birds reared on slatted floors or litter.

Housing and Management

After a 12-month period of lay, pullets on litter consistently outlayed those in cages or on wire. Caged birds converted feed more efficiently than pullets on litter or wire. Egg size slightly favoured pullets on wire floor over those in cages or on litter. Eggs with the cleanest shells came from the wire floor pen, and the dirtiest eggs from cages. Highest mortality occurred in cages and the lowest on wire floors.

UTILIZATION OF PLANT AND ANIMAL PRODUCTS

Dairy Products

Preliminary evidence indicates that a small amount of antibiotics is present in Ontario milk. This results from the treatment of cows for mastitis.

A comparison of tap water, distilled water, buffered distilled water, and peptone water for dilution blanks for the standard plate count indicated that peptone water gives significantly higher counts. Peptone water is recommended for dilution blanks for the standard plate count in the Guelph area.

A survey of milk in one area indicated that there were a number of herds producing rancid milk. The milk was susceptible to rancidity if the cows were in the later stages of lactation or suffering from mastitis. Rancidity increased if the milk was transported in long vacuum pipe lines. The problem was overcome by the elimination of the mastitic cows, the cows late in the lactation cycle, and the vacuum transportation of milk.

A number of methods of handling milk samples taken from farm bulk tanks were compared. It was found that satisfactory samples could be maintained if: (1) the composite samples were removed from the tank truck daily and held refrigerated until required, and (2) the samples were taken daily and one ounce aliquots were removed by the dairy and placed in the composite bottles. The composite samples must remain refrigerated at the dairy.

The Kofranyi Orange G dye, and Kjeldahl tests for the determination of milk protein were compared. The Kofranyi and Orange G dye methods measure the proteins colorimetrically and are much more rapid than the Kjeldahl method. The Orange G dye test appears to be a reliable test for the mass analysis of milk protein, and may be used as a basis for payment for milk.

The phosphatase enzyme in milk is destroyed by pasteurization, and the presence of this enzyme is used to check the efficiency of pasteurization. The Scharer phosphatase test is laborious and time-consuming compared to the newer Aschaffenburg and Mullen test. The latter was found to be equally effective in determining phosphatase as the former.

Numerous bacterial analyses and bacterial activity tests were made on milk which had been cooled in the ice bank and direct expansion bulk tanks. The samples were obtained from typical farms in the Guelph area from bulk tanks of different manufacturers. The analyses indicated that there were no significant differences in bacterial numbers or activity in milk which had been cooled and held in the two types of tanks.

The curd tension of reconstituted skim-milk is decreased by high storage temperatures, increased length of storage, and high moisture content of the skim-

milk powders. A high curd tension is required when the powder is to be used to make cottage cheese.

Studies were completed on the identification and role of lactobacilli in Cheddar cheese ripening. Four hundred cultures have been classified into various groups by recognized and modified procedures. The shortcomings of certain routine procedures used for the identification of the organisms have been demonstrated, and a more practical basis for the characterization of lactobacilli from Cheddar cheese has been advanced.

Approximately 70 vat lots of cheese were made from raw milk or milk which had been heat treated, pasteurized, or treated with hydrogen peroxide and catalase. The results indicated that some staphylococci survive the cheese-making process when the cheese is made from raw milk. The hydrogen peroxide-catalase treatment was effective in eliminating 99.5 per cent or more of the microorganisms of raw milk. The cheese made from this hydrogen peroxide-catalase treated milk had more flavour than the cheese made from pasteurized or heat-treated milk, but it had a softer body.

Meat and Poultry Products

Further investigation of standard meat cooking methods for use with the meat shear test for tenderness was conducted. There were wide variations in tenderness within each of the two top Canadian grades for beef but the difference between grades was not significant. The electronic oven and pot roasting were not satisfactory as standard methods for the meat shear test. It was found that the tenderness of beef increased with time after slaughter but that most of the effect of aging occurred during the first week.

Commercial enzyme preparations were shown to be without effect on tenderness of beef cooked by a moist heat method (braising) as measured with a shear meter. Preliminary results indicate that the tenderness of beef cooked by a dry heat method (broiling) is not affected by the application of enzymes as measured with a shear meter. However, the estimation of this effect by a palatability preference panel was the reverse, possibly owing to identification of samples because of the high concentration of salt in commercial enzyme preparations.

Studies involving factors affecting egg quality have given further evidence of their importance in egg marketing. The addition of phosphate supplements to an "all-vegetable" laying diet did not improve egg quality. However, regardless of diet, there was a significant difference in quality of eggs produced by four strains included in the experiment. The average Haugh unit value for the eggs produced by the three light strains was 87.7, 82.9, and 85.8, and for the heavy or dual purpose strain 84.5.

White Leghorn hens maintained in cages, on wire floor, and on litter, produced eggs with an average quality of 78.9, 78.7, and 78.0 Haugh units, respectively. The percentage of eggs containing blood and meat spots was 17.2, 14.5, and 11.5 for the cage, wire floor, and litter groups, respectively.

In a study involving eggs secured from three specialized poultry farms, it was found that the quality loss in holding eggs from birds in lay for 7 to 8 months, and for 12 months, respectively, declined at approximately the same rate as that of birds laying for only 3 to 4 months. However, the initial quality of the older groups' eggs was found to be lower by about 10 Haugh units. Also the quality of eggs from the older birds was less uniform. Because of these factors, the younger birds' eggs remained within the Grade A category longer and more uniformly than did those from the older groups. Eggs from all age groups retained their quality better at 50°F storage temperature than at 60°F, and much better than at 70°F.

Eggs of all age groups lost quality in direct relationship to length of hold. The most rapid decline occurred during the first 36 to 72 hours.

A co-operative study was conducted to determine the effect of Canadian retail merchandising practices on egg quality. It was found that 80, 86, and 84 per cent of the chain stores, and 36, 43, and 56 per cent of the private stores held reserve stock under refrigeration in November, April, and August, respectively. There was a gradual increase in the percentage of undergrades, in the sample inspected, from November to August. Since this increase follows a seasonal increase in temperatures, and possibly other factors, it emphasizes the importance and need of proper handling of eggs under temperature-controlled conditions at all times.

Egg washing experiments demonstrated no significant difference between three basket type washing machines in their ability to clean eggs and increase storage time. It was determined, however, that increasing the temperature of the wash water decreased the number of contaminating bacteria, and that the original condition of the eggs and the new environment in which the eggs were stored after washing greatly influenced the bacterial population in the egg.

Vegetables, Fruits, and Frozen Foods

Five potato varieties were investigated for the effects of storage temperatures at 32, 40, 50, and 60°F, and of temperature conditioning upon colour of chips and reducing sugars of potatoes with and without maleic hydrazide (sold in Ontario as MH-amine) treatment. There was no definite trend in the effects of MH-amine treated potatoes upon reducing sugars and chip colour, whereas pronounced changes were found to be associated with variety, storage temperature, and length of conditioning. The Kennebec variety always yielded chips of good colour owing to a sluggish build-up of sugar at temperatures of 40°F and over, whereas the Huron variety consistently yielded chips of undesirable dark colour and bitter taste. Storage temperatures of 50 and 60°F usually resulted in low sugar levels and good colour of chips while, at lower temperatures, conditioning was found to be desirable for most varieties. Marked differences were noted in the rate of lowering sugar levels as a definite varietal characteristic.

The effects on physiologically active potato tubers of storage in varied ranges of temperatures and atmospheres were as follows:

Storage Temperature °F	Storage Atmosphere	Major Effects on Tubers
32 to 50 60 32 to 40 50 60	all ratios of O ₂ :CO ₂ normal	Consistent decrease in ascorbic acid (AA) Minor decrease in AA Reducing sugars (RS) accumulated RS constant RS diminished
32 to 60 32 and 50 40 60 32 to 60	" > normal " " " " " " " " " " " " " " " " " " "	No effect on RS and AA Greatest RS increase Moderate RS increase Least RS increase

Conditioning of tubers at 75°F was not affected by previous storage in modified atmospheres. Specific gravity and weight changes during storage were correlated directly with sprout weights. Cooking quality was not impaired by any treatment except as reducing sugar accumulation lowered chipping quality.

Preliminary results indicated that potatoes, particularly those from early harvest, are a rich source of vitamin C. Peak levels of total ascorbic acid were

observed early in August and these decreased with later harvest dates. Early harvested potatoes contained between 25 and 42 mg. total ascorbic acid per 100 gm., while following a 3-month storage at 40°F these levels decreased to about 30 per cent of the original values. It was noted that the proportion of oxidized to reduced ascorbic acid remained fairly constant within each variety. The proportion of oxidized (dehydroascorbic acid) to the reduced form of the vitamin ranged from 25 to 60 per cent of the total. This result appears to be closely associated with the browning or discolouration potential of the individual varieties tested.

After harvest, roots of 18 rutabaga varieties averaged 29.1 mg. of ascorbic acid per 100 gm. of fresh tissue; by March, the value was 26.5 mg. Four of these varieties showed a coincident high reflective value (whiteness) and they were unacceptable for freezing, whereas the remaining 14 varieties were good to excellent as a frozen product. None yielded a palatable or attractive product when canned.

Inadequacies of visual colour grading of tomatoes for whole pack canning can be overcome, to some extent, by use of the Agtron-E photoelectric instrument. The external colour is not a dependable grading criterion for predicting internal colour, as a means of providing a uniform grade of canned product. The dividing line between No. 1 and No. 2 tomatoes corresponds to a 52.85 Agtron-E reading, which is somewhat higher than the 48.0 value for juicing tomatoes. This is to be expected since tomatoes of better colour are normally softer and more mature and, consequently, yield a lower grade product owing to poorer texture.

Cereal Grains

A machine has been developed and instrumented to determine the crushing resistance of grains and the force-deformation relationship for various types of grains. The crushing resistance of wheat kernels was from 10 to 20 lb., irrespective of orientation. The crushing resistance of corn was from 15 to 30 lb. when the force was applied to the narrow dimension, and from 150 to 200 lb. when applied in the direction of the wide dimension of the kernel.

Studies have been carried out on the air resistance and terminal velocity of grains in free fall as a basis for design of machines for seed cleaning and grain conveyance. The velocities reached when the kernels were dropped in still air from a height of 30 ft. were 28 ft. and 30 ft. per second for wheat and corn, respectively. These are not the terminal velocities.

In the drying of shelled corn, a mathematical expression has been developed which presents a relationship between the elapsed time, air flow rate, air condition, moisture content of the corn, and depth of corn.

A technique has been developed for determining the surface area of irregular objects such as corn kernels by coating the kernels with a very fine nickel powder.

DISEASE, INSECT AND WEED CONTROL

Diseases

A promising method of purifying *Streptomyces* actinophages by column chromatographic techniques is being developed, and it is hoped that this new method can be used to purify and concentrate actinophage isolates for electron microscopy and antigen preparations.

Serological studies on the *Streptomyces* have proved the existence of group antigens of different distribution, and have proved that each species contains an antigenic fraction that is unique and specific. While it has not yet been found feasible to employ a monospecific serum for direct recognition of *S. scabies*, prepared reagents are capable of differentiating *S. scabies* from other species, and demonstrating that *S. scabies* and nutritional mutants are serologically identical.

While it has been possible to demonstrate a high incidence of heterokaryon formation in *S. scabies* under laboratory conditions, greenhouse experiments have failed thus far to demonstrate a significant effect of this process in the incidence of potato scab lesions. Investigations to date indicate that the well known variability of *S. scabies* species may result from variations in cytoplasmic factors, since the characteristics which behave in the normal nuclear gene fashion have been found to have a mutation rate no higher than other microorganisms.

Several diseases of fruits and vegetables—for example. Sooty Blotch of apple in Northern Spy apples, Bacterial Spot and Bacterial Canker on tomatoes in some fields in Kent County, Cabbage Yellows in the Burlington area, and Alternaria Leaf Spot—were abundant in some parts of the Province.

The most recent disease to enter the Province, and one that is potentially dangerous to fruit crops, is Pear Blast. This disease, which is readily confused with Fire Blight, was recognized in the Collingwood area in 1959. It is present in a number of orchards. It has been tentatively suggested to growers in that area that the control practices recommended for Fire Blight may control Pear Blast.

Dodecylguanidine (Cyprex) was the subject of further comparative tests with other fungicides on several varieties of apples. Cyprex has excellent fungicidal value. Furthermore, the material caused no apparent injury to foliage or fruit when used at $\frac{1}{2}$, $\frac{3}{4}$, or 1 lb. rates.

The saprophytic potential of *Colletotrichum atrementarium* in relation to its overwintering and survival, in the absence of the tomato host, has been studied. The organism appears to be a relatively poor saprophyte in so far as its ability to colonize new soil is concerned; yet it can survive in the face of active competition from associated soil flora. How this is accomplished is not yet understood.

Twenty fungicidal chemicals (10 commercial and 10 experimental) were tested as seed dressings for control of seedling blight and smut diseases in oats. Only three of these chemicals have complete control of the diseases—Panogen, Puraseed, and TMF216.

Powdery mildew of barley continues to be quite prevalent in Ontario, especially on varieties like Montcalm and Parkland. New races of this organism have appeared on the "resistant" varieties, Brant and York, but thus far do not appear to be as virulent as the older mildew races which attack Montcalm and Parkland. Back crossing programs to incorporate "resistant" genes in Brant and York are well advanced, should these new mildew races increase in Ontario.

Large brown blotches appearing on birdsfoot trefoil (Lotus corniculatus) proved to be a fungus belonging to the genus *Stemphylium*. Although no serious losses have resulted as yet, surveys are being made to estimate its incidence.

Cercospora blotch and bacterial wilt are frequent diseases on alfalfa and clover. The only feasible control method appears to be breeding for resistance to these diseases.

Several grasses have showed, for the past few years, a disease known as "silvery top", and it was suspected that this might be of a pathological nature. However, close examination has established that the death of the grass panicles was caused by mites feeding at the base of the panicles.

Initial studies to determine if hatcheries are involved in the spread of mycotic diseases in chicks and poults have demonstrated egg transmission of Aspergillosis during incubation.

Insect and Pest Control

Control investigations of a strain of onion maggots resistant to certain organic hydrocarbon insecticides were initiated at the Bradford Marsh. Several organic

phosphates gave excellent control, but one was phytotoxic. Similar studies in the Toronto area on green onion production showed that Diazinon was highly effective.

Potato insect and disease control investigations established that Thiodan emulsion concentrate (1 qt. per acre) in a spray mixture, or water alone, gave excellent control of foliage insects. Phosdrin 100 per cent (3 to 6 fl. oz. per acre) provided satisfactory spot control for localized aphid (Myzus persicae) outbreaks.

Ecological studies on the European skipper, a new pasture pest, continued. Timothy is the preferred host plant for egg deposition, although orchard and twitch grass are also utilized. Laboratory rearing of collected larvae established that there are six instars. No first and only a few second instars were found in the field. Six species of parasites were reared from between 8,000-10,000 larvae.

Granary weevils (GG strain), after four generations of exposure to a mixture of Allethrin and piperonyl butoxide, were found to be significantly more resistant to the mixture than unexposed weevils. Females had developed more resistance than males.

Farm buildings more or less severely infested with powder-post beetles are common in Southern Ontrio and as far north as Manitoulin Island. *Anobium punctatum* is the commonest species. Thorough treatments with 5 per cent pentachlorophenol, 2 per cent copper naphthenate, and Carbolineum appear to give effective and lasting control.

Weeds

The experiment begun in May 1958 to determine the penetration and persistence in soil of the herbicide Simazine was continued. In May 1959, one year after application, all plots had their highest concentration of residual Simazine in the 0 to 1 in. layer (approximately 60 to 70 per cent for all plots except the 40 lb. per acre plots which had 81.6 per cent). At this time also, an average of only 8.3 per cent of the applied Simazine remained, the 1, 2, and 4 lb. per acre plots averaging 6.3 per cent, and the 12, 20, and 40 lb. per acre plots 10.2 per cent. The 40 lb. per acre plots had 14.4 per cent remaining.

Atrazine is being introduced as a replacement for Simazine on corn. It is used in the same manner as Simanize but exhibits greater reliability in a dry year. Using higher dosages of Atrazine (8 to 12 lb. per acre) and growing corn two years in succession, this chemical has shown a remarkable ability to destroy even hard-to-kill perennials such as twitch grass. The corn is not injured in any way. The possibility of eradicating weeds with Atrazine, while growing corn, is a very distinct possibility.

With three years of intensive testing on sugar beets completed, three trial-use recommendations were introduced for 1960. The three chemicals are Eptam, Vegedex, and Endothal. These show promise of sufficient weed control to allow the grower to mechanize more completely the sugar beet crop. In conjunction with this study, methods of applying pre-emergence herbicides were studied. The incorporation of Eptam with a double disk showed considerable advantage over surface applications. It has also been shown that the method of handling pre-emergent herbicides may improve the performance of many of them.

Combinations of Diuron-Dalapon, Dinitro-Dalapon, and Trietazine-Dalapon have given excellent control of weeds in potatoes at an economical cost. A broad, flat hill is established at the time of the emergence of the first potato sprouts and the weed control treatment is applied immediately. No further cultivation is done in the crop. Yield or potato quality has not been influenced. Weed control with Diuron and Trietazine with Dalapon has lasted for the crop year.

Eptam as a pre-plant treatment, double disked into the soil before planting, has performed extremely well on navy beans. An amine dinitro randox combination, pre-emergement to the crop, has also given good control. Both treatments are being given a trial-use recommendation in 1960.

The amine dinitro randox combination for white beans has also proved to be

an excellent weed control practice in soybeans.

OTHER CONTRIBUTORY STUDIES

Analytical Procedures, Assays, and Measurements

A series of hydroxyanthraquinones has been studied by means of spectrophotometry to determine the formation constants of the coloured complexes which they form with boron and other ions in concentrated sulphuric acid. A knowledge of the formation constant is useful in choosing the best reagent for a colorimetric analytical procedure.

The use of d.c. arc excitation, in connection with the 8-dyroxyquinoline concentrates of plant tissues, is under investigation. Results to date indicate that greater repeatability can be achieved than with the conventional d.c. arc discharge. Sensitivity, in general, is smaller with the exception of zinc which exhibits much greater sensitivity when excited with the condensed d.c. arc.

A modified version of the Hewlett micro-drop apparatus was constructed for bioassay in insect toxicological studies.

The purification procedure of a two-dimensional paper chromatographic method for tocopherols has been modified to permit its application to the analysis of chick plasma, liver, intestinal mucosa, and ingesta and fecal contents.

Continued testing of a microbiological method for the determination of glutamine in the deproteinized plasma of chicks has yielded reproducible values of glutamine and satisfactory recovery of glutamine added to the plasma.

A modified method with improved precision and reproducibility has been developed for the determination of chromic oxide in feeds and excreta in connection with digestibility and metabolism studies in various species.

A survey of the pantothenic acid content of over 500 samples of 40 types of animal and poultry feedingstuffs, and of the riboflavin content of 16 types of feedingstuffs, has been completed. Average pantothenic acid values obtained from a considerable number of these Canadian products were found to differ appreciably from commonly accepted published values.

Enzyme Properties and Synthesis

Studies on the properties of alkaline phosphatases indicated that the optimum pH (in vitro) for the enzyme of intestinal mucosa changed to higher values with increasing age of chickens, and to lower values with increasing age of rabbits. The optimum pH for the enzyme of intestinal mucosa in rats did not change during the age period of six weeks to six months. The pH optima for the phosphatases of other tissues in fowl, rabbits, and rats did not appear to change with the age of the animals or birds.

A survey was completed of 146 commercial cucumber brine vats to determine the role of microorganisms in the production of pectolytic enzymes responsible for the softening and deterioration of cucumber pickles during fermentation. Pure culture studies have shown that only the mould isolates produce enzymes capable of hydrolyzing pectic acid and pectin under the experimental vat conditions used.

Studies with anti-lactic dehydrogenase have demonstrated the presence of five distinct forms of the enzyme in rabbit and human tissue. Each tissue was found

to have a characteristic distribution of these different forms. Their enzymatic and serological properties were shown to vary in a uniform way which correlated with the electrophoretic mobility of these forms. A rapid test for the determination of electrophoretically slow-migrating to fast-migrating forms in serum has been developed, which may be of value in the diagnosis of cancer and leukemia.

While studying the mode of action of the antibiotic Vancomycin on Staphylococcus aureus, it was determined that during the period after the addition of the antibiotic there was little or no difference in the rate of synthesis of either protein or deoxyribonucleic acid when compared with the controls. There was, however, a complete inhibition of synthesis of ribonucleic acid and the results indicate that under the experimental conditions used net synthesis of ribonucleic acid is not an absolute requirement for the biosynthesis of protein.

Amino Acid Studies

Cells of the root nodule bacteria, *Rhizobium meliloti*, contained an intracellular pool of amino acids. The passage of C¹⁴ histidine or C¹⁴ glutamate into this pool occurred against a concentration gradient and was energy-dependent. An internally bound form of C¹⁴, containing a number of radioactive amino acids, was synthesized at the expense of radioactive pool components. This bound form consisted of several proteins whose syntheses were inhibited by the antibiotic chloramphenicol. When C¹⁴ labelled cells were suspended in a glucose-mineral salts medium there was an efflux of pool amino acids into the extracellular environment. This leakage was energy-dependent and presumably was a result of simple diffusion. It could be increased by prior X-irradiation of the cells.

It has been shown that 15 per cent of zein added to a diet containing 8 to 9 per cent soybean protein depresses growth and feed consumption of chicks and increases the requirement for lysine, the most limiting amino acid. A similar finding, although with more severe effects, has been reported for rats fed diets of an analogous type. The level of lysine in the blood plasma is lowered when zein is fed, and the evidence is that this effect is not simply a result of reduced feed consumption and growth. Several amino acids, added singly to the diet in place of zein but at approximately the level at which they occur in zein, did not reduce the plasma lysine. However, L-leucine retarded growth and decreased feed consumption.

Breeding, Nutrition, and Physiology of the Honeybee, and Royal Jelly

As a new approach in the distribution of hybrid stock, hybrid virgin queens were made available to beekeepers at a reduced price. The performance of this stock will be followed to determine whether this procedure is commercially practical.

Both the absolute and relative quantities of calcium and magnesium supplied to the plant affected the quantity of nectar produced under experimental greenhouse conditions. The pattern and magnitude of the effect differed with the species. Secretion of nectar by red clover was comparatively sensitive to the availability of both elements. The effect was not related to the influence of pH on ion uptake.

The quantity of nectar secreted by flowers of two species was affected by the application of synthetic growth-regulating compounds. It appears that natural compounds of similar structure present in the flower may regulate nectar secretion to some extent.

Further work on the ether-soluble acid mixture in royal jelly has led to the identification of 2-decendioic acid and p-hydroxy benzoic acid.

A method for the synthesis of trans-10-hydroxy-2-decenoic has been developed.

In the methanol-soluble fraction of royal jelly the occurrence of 24-methylene cholesterol has been established.

The secretions fed young queen and worker larvae differ in chemical composition. The differences are reflected in the quantity of carbon dioxide evolved by newly emerged larvae fed either of the two secretions. It is probable that the differential respiration is a reflection of metabolic processes preceding anatomical differentiation towards queen and worker forms.

Honeybee larvae were found to exhibit excellent growth on ether-extracted lyophilized royal jelly and one perfect queen has been reproduced on this food. It thus appears that the fat fraction of royal jelly, including the ether-soluble fatty acids, is not essential for queen differentiation.

Five proteinaceous bands or fractions were found in electrophoretograms of royal jelly and worker jelly. The amino acids constituting some of the fractions were identified. No evidence of qualitative differences between royal jelly and worker jelly, with respect to the proteinaceous fractions, was found.

Initial experiments showed that admixture of royal jelly with tumor cells, before inoculation, completely suppressed the development of transplantable mouse leukemia. By fractionation studies, it was found that the anti-tumor activity resided almost entirely in the fatty acid fraction of royal jelly and that acid conditions were necessary to demonstrate the activity. The active compound, 10-hydroxydecenoic acid, has been isolated in quality and studied in detail. A number of dicarboxylic acid fatty acids have been investigated and found to have anti-leukemic activity in the mouse protection tests. Chemical derivatives of these compounds, particularly methyl esters, are being tested for possible activity under conditions of neutrality.

Molybdenum Interrelationships

Studies with black rabbits showed that added molybdenum and thiosulphate, separately or in combination, failed to produce achromatrichia. Sulphate and thiosulphate did not alleviate the growth depression caused by added dietary molybdenum, and did not alter the molybdenum content of the liver. The increase deposition of copper in the liver caused by 1,000 p.p.m. of dietary molybdenum was lowered by 0.33 per cent sodium sulphate but not by 0.5 per cent sodium thiosulphate. Twenty p.p.m. of copper did not prevent the depression in growth caused by 1,000 p.p.m. of molybdenum in the diet.

Studies with rats showed that with a simplified diet of milk, sugar, salt, iron and thiamine, supplemented with 6 p.p.m. of copper, there was a significant depression of growth with 300 p.p.m. of added molybdenum, which was restored to normally by 350 p.p.m. of sulphate. Two hundred p.p.m. of manganese, as MnCl₂, had no effect on the poor growth caused by molybdenum. The addition of 100 p.p.m. of iron to the simplified diet, containing 4 p.p.m. of iron, did not affect the reduction in growth caused by added molybdenum at levels of 300, 500, and 1,000 p.p.m.

Insect Physiology and Metabolism

The metabolic function, if any, of the zinc in hemolymph and muscle tissue of the grasshopper is still obscure. The results of protein precipitation tests indicate that it is not protein-linked.

Studies in the function of the corpora allata of the cockroach (Periplaneta americana) showed that when these structures are extirpated, the transaminase activity of muscle tissue was lowered. This reduction was more pronounced in females, both adults and nymphs, than in males.

Granary weevils, Sitophilus granarius (GG strain), resistant to methyl bromide,

resembled the MW strain microbiologically and in colour. The resistant strain is not as readily cultured as the GG normal strain. GG strain weevils reared at 33°C, instead of the usual 27°C, also came to resemble the MW strain both microbiologically and in colour. The MW strain of S. granarius and S. oryza withstood the higher temperature much better than the GG strain. A culture of S. sasakii has been imported for further studies on insect mycetomes.

An examination of the internal flora of the MW and GG strains of S. granarius was completed. Three organisms were isolated and tentatively identified as Micrococcus freudenreichii, a variety of the Bacillus cereus group, and a species of Corymebacterium. The latter organism was isolated from larvae and pupae only, and more frequently from the GG strain. All seemed to have distinct distribution patterns.

Cytotaxonomic Studies

Cytological studies on the fern (*Dryopteris spinulosa*) complex in Southern Ontario have shown that it consists of diploids which may be referred to *Dryopteris intermedia*, tretraploids which are *D. spinulosa* (typical), and triploid hybrids (intermedia x spinulosa). *D. spinulosa* var. americana was not found in Southern Ontario flora.

Chromosome studies on the genus *Erigeron* (fleabanes) in eastern North America indicate that chromosome numbers for each species are constant over most of its geographical area of distribution. However, isolated stations have been found with races having different chromosome numbers. Chromosome numbers for nine species have been reported for the first time.

Ecology

In a study of the life history of wild rice Zizania aquatica var. angustifolia, it has been found that three types of leaves are produced: submerged, floating, and aerial. The time of initiation of these leaves and the structure have been determined. The structure of the aerial leaves suggests that Zizania may be more closely related to the genus Oryza than their chromosome numbers indicate. The development of male spikelets has been followed through to the maturation of the pollen grain.

In Mare's Tail (*Hippuris vulgaris*) five main types of leaves are produced: rhizome, juvenile and adult submerged, and juvenile and adult aerial. Leaf morphology and anatomy are distinct in each type. These types have been demonstrated in other studies of aquatic plants. By laboratory cultures, it has been possible to determine the effect of environment on leaf anatomy.

The absence of poplar pollen in borings from sphagnum bogs led to a study of the rate of disintegration of pollen from pine (Pinus), poplar (Populus), and cat-tail (Typha) in the same water environment. It was found that pine pollen was the most resistant to disintegration, cat-tail pollen was less resistant, while poplar pollen disintegrated rapidly. Some factors affecting the rate of pollen breakdown have been investigated.

Plant Physiology

A fundamental study of bioelectric potentials and photosynthate translocation in plants is well under way. Preliminary translocation experiments were performed with soybean plants using C¹⁴O₂ to label the photosynthate, and techniques were developed for assay of C¹⁴ in plant parts. Equipment for recording bioelectric potentials was designed and assembled. Measurements of potentials between different portions of the epidermis of the soybean stem, with special calomel electrodes, gave erratic potentials owing to external electrical fields and change of electrode contact associated with plant growth. Potentials, which could be attributed to

translocation, have not been observed as yet. Measurements are continuing using metal microelectrodes inserted in the vicinity of the vascular bundles of cucumber stems.

Capillary Conductivity

Capillary conductivity data were obtained on a sample of sand-sized alundum grains over three complete pressure cycles. At present, data are being obtained on a sample of Guelph loam soil. Results indicate that air entrapment on "wetting up" close to saturation causes a decrease in the capillary conductivity.

Weather Records

Tabulation of analysis of weather records was continued and abstracts of weather data were supplied.

ECONOMICS OF FARMING

Farm Management

The farm management and accounting project reached a record number of over 400 for the year 1958. Analysis of these records showed an average labour income of \$2,710, up 74 per cent from 1957, and surpassed only by the \$3,318 of 1951. The average labour income for each type of farm was as follows: (1) steer feeding — \$4,660, (2) cash crops — \$3,566, (3) dairy specialty — \$3,355, (4) large hog enterprise — \$3,178, (5) poultry general — \$2,926, (6) dairy general — \$2,179, (7) beef-hog farms with cows not milked — \$1,554, and (8) beef farms with cows milked — \$1,541. Is should be noted that, in addition to labour income, the farmer had the interest on his equity (5 per cent of his equity has been deducted for the return to his capital as separate from his labour), his house (insurance, taxes, hydro, telephone, and repairs have been included in the farm expenses), his car (insurance, license, depreciation, repairs, and operating expenses have been included in the farm expenses), and any food produced on the farm and used in his household, such as milk, eggs, etc. If adequate allowance is made for these additions to income, this group of farmers had a fairly good return.

About 440 records for 1959 indicate a very substantial reduction in farm and labour incomes. Dairy specialty farms appear to be the only type of farms not showing considerable income reductions; most other types show a decline of about 50 per cent in labour incomes.

A study of 75 fluid milk farms in the Toronto milk shed showed constant returns to scale and very low earnings for labour.

A study of hog production on 83 farms using conventional housing and production methods showed that the most profitable farm size would have been about double current size under 1958 conditions. The most profitable size in 1958 would have shown an output of about 450 hogs and 23 beef animals, and a small output of milk or cash crops. Farms tended to have too much labour and machinery in proportion to their resources, and this implies pressure to add extra land and livestock for greater efficiency. On these conventional hog enterprises, earnings of labour were higher for farms having two enterprises (hogs and beef) than for those producing hogs only.

A study of 35 commercial broiler enterprises showed that, assuming the same price per pound of live weight at market age, profits per year from a given amount of housing tend to increase if marketings are at weights somewhat below average because of a more favourable conversion rate, more birds per square foot of housing, and more lots of birds per year.

The third year of the co-operative project on Manitoulin Island has been

concluded and satisfactory progress has been shown. The results achieved to date are greater than was anticipated. The farms chosen for the study were four on which the livestock showed mineral deficiency symptoms; these symptoms have now largely disappeared. Surface drainage, recommended on all farms, has given excellent results in increased yields of fodder and grain. Fertility recommendations have also greatly assisted in increasing the revenue from the farms. The labour income on all farms showed a remarkable increase over the initial year. The work, in relation to the extension program of the Island, has produced valuable results.

Vertical Integration

A study of vertical integration in the hog industry included a survey of about 1,100 feed dealers. About 8 to 12 per cent of the hogs produced in Ontario in 1958 were involved in some form of contract production. Eighty per cent of the contracts were of a credit type under which the farmer owned the hogs. Much of the contracting was not of recent development.

Marketing and Merchandising

A study of demand for Canadian exports 1945-57 yielded derived price elasticities of demand as follows: wheat -4, newsprint -2, wood pulp -4.5, copper -6.8, and aluminum -7.3. These results were fairly similar to the findings on pre-war data in a study conducted at the Royal Military College using similar analytical techniques.

A study of prices and per capita consumption of pork and lard in Canada over the period 1949-58 indicated that the elasticity of demand at the farm level was —.7; that is, a one per cent change in price is accompanied by .7 per cent change in per capita consumption in the opposite direction.

With adjustments made from changes in hog supply, a one per cent change in cattle prices, at the mean, is accompanied by a .3 per cent change in hog prices in the same direction. It was found that there has been a definite shift in the consumer preference from pork to beef, in the past decade, as opposed to the previous two decades. With pork prices the same, relative to beef prices, consumers now eat more beef relative to pork. The same shift is evident from pork to poultry.

A study of the relationship between the farm price for hogs and a composite of retail pork prices over the period 1949-58 indicated that each one cent change, at the retail level, is associated with a .6 cent change at the farm level. There has been a changing relationship between farm and retail prices, with the composite retail price of pork increasing, on the average, .6 cents per pound per year independent of pork prices at the farm level.

Between 1949 and 1958, hog prices at the farm level declined, on the average, 21 cents per hundred per year in current dollars, and 83 cents per hundred per year in constant (1949) dollars.

An analysis of pork exports over the period 1953-8, using six-month averages, showed that only about 40 per cent of exports to the United States could be explained by variations in the Canadian-United States price ratio. Thus there are other important factors influencing Canadian pork exports in addition to relative price levels in Canada and the United States.

The hog production cycle arises because producers tend to base production plans on current or past prices. Over the period 1953-8, using six-month averages, there was a regular three-year cycle of hog production. Using a system of lagged prices, 88 per cent of the variation in Eastern Canada hog marketings and 74 per cent of the variation in Western Canada hog marketings can be explained

by the prices at specified earlier periods. The critical price period influencing fall marketings is that of 18 months earlier. Farmers are willing to produce an increasing number of hogs at the same price. In the cycle 1955-8, farmers would produce 600,000 more hogs than in the previous cycle at the same prices.

A study of production controls in tobacco farming showed that tobacco farming was much more profitable than most other types of farming, and that this high income has been capitalized into the market value of farms with acreage rights. Between 1950 and 1959, market value of all tobacco farms, sold at least twice during this period, increased, on the average, at the rate of \$4,500 per year. This resulted in a doubling in the value of tobacco farms in the decade. The rise in cost of tobacco production during the period was due almost entirely to the increase in land values. This study has indicated that the gains of the production control program in tobacco has accrued to farmers as land owners rather than as producers.

Business Management

A study of 67 local feed mills in Western Ontario indicated a widspread need for more complete business records for effective planning and control. There were wide variations among mills, even in the same area, in prices charged, gross margins, and net earnings. Gross feed sales varies from \$40,000 to \$2,000,000, with no significant relationship of size and net profit as a percentage of sales. Typical net profit ratio after payment of all expenses, including interest on borrowed capital and management salaries was 2 to 3 per cent of the sales.

Land Use

A technique was developed for assigning values to land used for recreational purposes. It was found that it is possible to predict the number of visitors to a park from the total population living given distances from it. From this information, projections were made of the demand for land for recreational uses, and values thus ascribed to this land.

Co-operatives

A study of co-operative development in Ontario revealed the dichotomy between its urban and rural wings. Urban development has been largely among credit unions, whereas rural co-operatives have embraced farm supply, marketing, and insurance fields, with only limited development of credit unions. Growth has been phenomenal. Between 1939 and 1959, the number of credit unions has grown from 35 to 1,400, and the number of farm supply co-operatives from 30 to 157. A co-operative automobile insurance company began operations only in 1950, but by 1959 it was the fourth largest company in that field in the Province. With this growth there has been a corresponding growth of problems in method of control, management, and capital.

Socio-economics

A study of the aging population of Wellington County showed remarkable similarity of rural, urban, and institutionalized aging persons in regard to living conditions, educational levels, and health. The rural group had about the same level of current earnings as the urban group, but lower receipts from pensions, government annuities, and income from investments. Excluding old age pensions, the average annual income of the rural aging was less than half that of their urban counterparts. The rural aging attended church and saw their families more regularly than the urban aging; otherwise, they were much more restricted in their social contacts.

Farm Mechanization

A belt-driven welding generator for three point hitch-mounting on Ford-Ferguson tractors was developed. Blueprints of the design are available.

WILDLIFE, INCLUDING FISH AND RANCH FUR BEARERS

Disease

A survey conducted on Manitoulin Island incates that, at present, deer are not important reservoirs of infection for livestock disease organisms. Of other wildlife species examined, the snowshoe hare seems to be the most important reservoir for human disease organisms.

A survey of the parasites (Copepoda, Hirudinea, Monogenea, Mollusca, and other blood parasites) of freshwater fish is being conducted. More than 400 fish specimens have been examined and the parasites preserved for study and identification.

A survey of the natural microflora of Ontario sport fish and the waters they inhabit has been completed. Of 1,189 cultures isolated from 350 fish, 847 were successfully classified into 14 genera. Species belonging to *Pseudomonas* and *Aeromonas* were found to occur most frequently.

Continued studies on bacterial diseases of freshwater fish have demonstrated the presence of kidney disease, furunculosis, and ulcer disease in various species of fish taken from several rivers in Ontario.

Nutrition

A metabolism cage for use in studies on the energy and nitrogen utilization and requirements of the mink has been designed and has been used successfully in preliminary investigations. Feed dry matter consumption appears to be governed by the apparent digestible energy content of the ration.

In rations for growing mink, protein levels in excess of the commonly recommended levels appear to give no advantageous effects when the rations are adequately supplied with energy from other sources.

One type of experimental "dry ration" gave excellent growth in mink from weaning, and also supported good reproduction in terms of live litters, but does not produce satisfactory growth and development of the kits during the lactation period. A "dry ration" based on more practical ingredients gave only fair growth in kits from weaning to maturity.

Butylated hydroxy toluene (BHT), incorporated as an antioxidant in frozen fish products at a level of 0.1 per cent, appeared to retard the growth of mink kits.

In an extensive series of observations, the mean time of passage of carminedyed feed through the digestive tract of dark mink was found to be 142 minutes (range 62 to 215 minutes) with no apparent differences attributable to sex or to the particular diets being used.

Biological Studies

A study of the biology and control of starlings was completed. Damage to ripening fruit in the Niagara Peninsula is mostly by juvenile birds. Ontario birds are both resident and migratory. Migration is generally in a northeast-southwest direction. Brood sizes and fledgling percentages were larger at Guelph than in upstate New York, indicating lower nest mortality. Among roosting starlings, adult males outnumbered adult females by 4.6:1. The nestling sex ratio was balanced. A flood-light trap was of only limited value for catching roosting starlings. Known

methods of control cannot satisfactorily reduce existing starling populations. Local control in cities is possible but expensive.

Crop and Rangeland Damage

On Manitoulin Island, snowshoe hares exert an influence on forest succession through barking and browsing pressure on tree seedlings and saplings. Iron wood, trembling aspen, and sugar maple, particularly, were heavily utilized and killed in large numbers. About 750 hares have been collected and 600 were autopsied and certain organs preserved for further study. The sex ratio showed an imbalance in favour of females.

Fisheries Management

Studies were carried out on trout populations in several Southern Ontario watersheds, and, in particular, the Nottawasaga River system. The results indicated that legal length limits served no useful purpose and actually limited the potential harvest of both native and planted trout, and demonstrated the lack of an ecological basis for present fish-stocking programs.

Initial stocking rates of 250-500 yearling trout per acre are effective in establishing populations in farm ponds. Subsequent stocking depends on the size of harvest and the extent of natural reproduction. High exploitation rates result in greatest utilization of crops because of the short life-expectancy of the species. Legal length limits prevent maximum utilization of trout stocks and are a factor in over-population.

Introductions of fry, or fingerlings, or parent bass effectively established pond populations. Even with heavy exploitation, natural reproduction adequately maintained populations. Over-population, the result of inadequate harvest of bass, resulted in stunted fish.

Behaviour Studies

A study of the reactions of Mallard duck hens to predators during laying, incubating, and brooding was completed. Distraction display was most frequent at hatching and early brood stages; escape behaviour was most frequent in the early stages of nesting and the late stages of brooding. Hens with broods vocalized after distraction displays more frequently than hens with nests.

EXTENSION AND SERVICES

Extension together with teaching and research remains one of the principal functions of the College. Most members of the staff take some part in the numerous and varied extension services which are carried out regularly for the agriculturists and agricultural industries of the Province. An important part of this work consists of providing information and advice to the thousands of individuals who make enquiry by letters or by personal visits to the College. The enquiries deal with a multitude of questions ranging all the way from the use of fertilizers and insecticides to the planning of a banquet or of a new barn. Very many requests are for information which must come from the College laboratories. Over 30,000 analyses and tests of soils, dairy products, well water, etc., were made during the year.

An extensive series of short courses, conferences, and other meetings arranged by various departments brings thousands of interested people to the College each year. Not only livestock producers and seed processors, dairy men and horticulturists, but bankers and clergymen as well who are interested in the problems of rural life find attendance at these meetings to be well worth while.

In addition, members of the staff have delivered addresses at hundreds of

meetings held in various parts of the Province, they have taken part in radio and TV productions, have judged at many fairs and shows, have conducted many demonstrations and field days, and have assisted in other activities of farm groups. They have also visited thousands of farms to deal with individual problems in crops, livestock, soils, etc.

Members of the staff have prepared bulletins and circulars and numerous other articles for the farm press. They have been responsible also for a regular service of news releases and photographs which have been sent to the daily papers and other appropriate outlets. Up-to-date information has been provided for the Spray Calendar and Weed Control Circulars. The number of people reached by all this printed material is hard to estimate but is certainly large. Of one publication which appeared in July, some 15,000 copies have already been distributed.

Special mention can be made here of only a few of the extension programs

carried out by the various departments.

- 1. The Ontario Hatchery Supply Flock Policies, chickens and turkeys, are administered by the Department of Poultry Science. The Department of Microbiology supervises the blood testing. The total number of chickens tested was 1,493,628 in 2,216 flocks, compared with 1,477,401 in 2,458 flocks the previous year. The reaction on the first test was 0.06 per cent, compared with 0.02 per cent in 1958-9. The majority were tested by the rapid whole blood method. The total number of turkeys tested was 102,718 in 131 flocks, compared with 114,398 in 155 flocks the previous year. No pullorum reactors were reported for either year. All turkey blood samples were tested by the serum plate method this year for the first time.
- 2. Apiary registration in Ontario in 1959 totalled 127,152 colonies operated by 2,967 beekeepers. Apiary inspection was carried out in 3,105 apiaries, totalling 44,843 colonies. American Foulbrood was found and destroyed in 1.8 per cent of these colonies. Approximately 60 disease samples were diagnosed in the laboratory.
- 3. The Department of Engineering Science has been established as the national design and drafting centre for the Canadian Farm Building Plan Service. The development of the eighth catalogue and series of plans was completed. The organization and work of the Service were the subject of an exhibit at the Central Canada Exhibition at Ottawa and the Royal Winter Fair at Toronto. Some 60 additional sets of building plans were completed during the year and are now available for distribution.
- 4. A series of regional Finance Schools organized to provide a program of agricultural education for bankers and other financiers was held at nine different locations with a total attendance of about 550. A special conference for assistant managers and credit officers held at the College was attended by an additional 125 bank employees.
- 5. In the Warble Fly Control campaign 16 schools for inspectors and township councillors were conducted at widely separated points in the Province. Some 275 townships in 38 counties took part in the control program. The extent of the program is indicated by the fact that approximately 2,750,000 cattle were treated during the prescribed period, April 18 to May 31.
- 6. The Department of Public Relations performed the function of an extension service unit and visual aid centre for the Ontario Department of Agriculture as well as for the College. During the year it produced thousands of photographic prints and slides, hundreds of feet of 16mm film and microfilm, and several motion pictures, some with sound. It also organized and conducted courses in photography and projectionist training, in the use of exhibits, and in layout and design for the Associate Diploma Course, the Short Courses, and the faculty of both the Ontario Agricultural College and the Ontario Veterinary College. It printed and distributed

many thousand copies of numerous circulars and prepared extensive exhibits for the major fairs in Ontario. It organized the annual Winter Short Course, attended by over 500 students, the Farm and Home Week, attended by 13,000 rural people, and arranged programs and accommodation for the many groups visiting the College, in all some 52,000 people.

MACDONALD INSTITUTE

The total attendance for the year was 219; 40 students were enrolled in the Diploma Course, and 179 in the Degree Course. Again this year, about 40 students, mostly third year, had to live out of residence. For the Degree students, some slight changes have been made in the required courses, and some new optional courses have been added.

The Nursery School was opened in September with 16 (second term, 19) preschool children (ages $2\frac{1}{2}$ to 5 years) in attendance. The children came from faculty homes and from other homes in Guelph in about equal numbers. The first year may be considered to have been an experimental success.

Staff participation in extracurricular student programs and with outside groups has continued to increase. Considerable co-operation has been given as well in the preparation of material for publication in newspapers and magazines, and for radio and television programs; similar co-operation of staff with visiting conference, short course, and touring groups has been appreciated by a wide variety of visitors to this campus. Staff and department involvement with the student College Royal Open House in the spring has increased exceedingly over the past few years.

The studies in textiles and experimental foods continued during the year, the latter resulting in the production of a leaflet, "Let's Use Ontario Cheese", prepared jointly by the Department of Dairy Science, O.A.C., and Macdonald Institute. A technical investigation of two types of chlorine bleach and their effect on a family wash (cotton) has been proceeding in the home management department.

Ontario Veterinary College

Student enrolment increased from 279 in 1958-9 to 303 in 1959-60. A change in curriculum facilitated direct registration in to the second year by confining the first-year courses to subjects which can be taken at most universities. The increase however, was not entirely atributable to students entering on advanced standing, but also to the fact that there were more qualified applicants for first year. Included in the above figures are 20 graduate students, an increase of five over the previous year. Improved facilities now make it possible to take a total of 350 students. To this end we have been active in a recruiting program. Officers of the college have visited high schools and other appropriate institutions in Ontario, the Maritime provinces, and in Manitoba for the purpose of making prospective students aware of the advantages of pursuing a course in veterinary medicine.

ADMINISTRATION

On March 31, 1960 the faculty of the College consisted of 58 permanent, 6 temporary, and 4 part-time members. The office, technical and maintenance staff was comprised of 113 permanent, 55 temporary, and 23 casual employees.

Appointments

New appointments during the year were: A. S. Szekely, B.Sc., B.A. to the Department of Anatomy as Assistant; P. K. Basrur, M.Sc., Ph.D. to the same Department as Assistant Professor; O. M. Radostits, D.V.M. and D. C. Cope, B. Vet. Med., M.R.C.V.S., to the Department of Medicine and Surgery as Graduate Assistants; N. Platonow, B.A., D.V.M., M.V.Sc., to the Department of Physiological Sciences as Graduate Assistant; L. Bridge, B.A., B.L.S. to the Library.

Resignations

Those who resigned during the year were: V. Zavitz, D.V.M. from the Department of Anatomy; S. D. Vesselinovitch, B.S., Dipl. Vet. Med., M.V.Sc., D.V.Sc.; R. B. Miller, B.Sc., D.V.M. and S. V. Blizzard, B.Sc., M.R.C.V.S. all from the Department of Medicine and Surgery; J. D. Mongeau, B.A., D.V.M., M.V.Sc., from the Department of Pathology and Bacteriology; P. Moore from the Library.

Degrees, Honours, and New Awards

T. L. Jones, D.V.M., M.Sc., Principal, was awarded an Honorary Associate Membership of the Royal College of Veterinary Surgeons; C. R. Cameron, B.A., M.S.A., of the Department of Physiological Sciences received the degree of Doctor of Veterinary Medicine from the University of Toronto; H. G. Downie, D.V.M., M.V.Sc., M.S., of the Department of Physiological Sciences received the degree of Doctor of Philosophy from the University of Western Ontario; T. J. Hulland, D.V.M., of the Department of Pathology and Bacteriology received the degree of Doctor of Philosophy from the University of Edinburgh; D. C. Maplesden, D.V.M., M.S.A., of the Department of Medicine and Surgery received the degree of Doctor of Philosophy from Cornell University.

Publications, Addresses, and Other Awards

A list of published articles which have appeared in the scientific literature is found in Appendix C of this report; these numbered 42. The extension staff has

continued to co-operate with the Director of the Information Branch, Department of Agriculture, in supplying topical news releases on animal health.

On July 20, 1959 the new building housing the Department of Medicine and Surgery was officially opened by Hon. W. A. Goodfellow, Minister of Agriculture, and by Hon. T. Ray Connell, Minister of Public Works. This ceremony occurred during the annual meeting of the Canadian Veterinary Medical Association which took place at the College, July 20 to 22, 1959.

Special Lectures on Civil Defence

Mr. R. M. Waters of the Canada Department of National Health and Welfare addressed veterinary students on February 11 and 12 on the subject of civil defence.

Visitors

Among the distinguished visitors to the College were: Dr. Constantino Brandariz, Dean of the veterinary faculty and vice-rector of the National University, La Plata, Argentina, and Dr. Bernado Epstein, Professor of Pathalogy in the same faculty; Dr. Hector R. Camberos, Dean, Facultad de Agronomia y Veterinaria, Buenos Aires, Argentina: Dr. Alfredo Vidigal das Neves e Castro, Director da Escola Superior de Medicina Veterinaria, Lisboa, Portugal, (Director of the Veterinary High School of Lisbon; Dr. L. Cournover, President, College of Veterinary Surgeons of the Province of Quebec; Dr. Thomas J. Jones, Dean, School of Veterinary Medicine, University of Georgia, Athens, Georgia; Mr. I. F. Keymer, Research Officer in the Poultry Department, Ministry of Agriculture, Fisheries and Food, Central Veterinary Laboratory, New Haw, Weybridge, Surrey, England; Professor W. M. Mitchell, retired principal of Royal (Dick) College of Veterinary Studies, Edinburgh University, Scotland; Mr. H. E. Ritchie, Lecturer at the Veterinary Field Station of the University of Liverpool, England; Mr. J. N. Ritchie, Chief Veterinary Officer, Ministry of Agriculture, Fisheries and Food, Animal Health Division, England and President of the Royal College of Veterinary Surgeons; Dr. M. S. Shahan, Director, Plum Island Animal Disease Laboratory, Greenport, Long Island, New York: Sir Saville Garner, British High Commissioner and Lady Garner: Mr. Charles H. Wake, First Secretary (Agriculture and Food), Office of the High Commisioner for the United Kingdom, Ottawa: Professor W. L. Weipers, Director of the School of Veterinary Studies, University of Glasgow, Glasgow, Scotland. Other visitors to the College during the year included Ministers and Deputy Ministers of Agriculture for nine of Canada's provinces, who were here in August, 1959. A group of senior students from the School of Veterinary Medicine, Saint Hyacinthe, Quebec, visited in November, 1959 and were entertained by our senior students. The final year students of the Pharmacy Course, of the University of Toronto, were shown round the College.

COLLEGE FUNCTIONS

The Annual Convocation and Baccalaureate Service

The Annual Convocation was held on May 15, 1959. The degree of Doctor of Veterinary Medicine was conferred on forty-eight students, five of whom had attained First Class Honour standing. The studies were addressed by R. Ian Macdonald, B.A., M.D., C.M., F.R.C.P., F.R.C.P.(C)., Director of Medicine, Sunnybrook Hospital, Toronto.

The Baccalaureate Service for the 1960 graduating class was held on March 20, 1960. The sermon was given by the Right Reverend H. R. Hunt, M.A., D.D., recently elected Suffragan Bishop of the diocese of Toronto.

The Student Chapter, American Veterinary Medical Association

The annual banquet of this organization was held on February 23, 1960 in Greelman Hall. The speaker was Dr. David K. Berlo, Head of the Department of General Communication Arts, Michigan State University. After the banquet the students held their annual "At Home and Open House" at the Ontario Veterinary College.

The School of Graduate Studies

During the academic year, 1959-60 there were 20 graduate students registered in the School of Graduate Studies, University of Toronto, to complete degree requirements in various departments at the Ontario Veterinary College.

At the annual spring Convocation held on May 29, 1959, the degree of Master of Veterinary Science was conferred on four students. At the fall Convocation in November, 1959 one student received a graduate degree.

Research Facilities

The main handicap to an expansion of the research program is the lack of physical facilities. This is particularly so in the case of the Department of Physiological Sciences, The lack of suitable space to house personnel in this Department has resulted in a scattering of the staff in various buildings. Some of these buildings were constructed to accommodate animals and, with minor structural changes, were seconded for the use of research personnel.

The research program in this department accelerated in 1957. The quality of research demonstrated in this department has already attracted funds from outside sources in the order of \$50,000 for the fiscal year 1960-1.

Some 77 research projects engaged the attention of the staff during the year, some of which were completed while others are still in progress.

REGISTRATION

Degree Course

In September 1959, 284 students, including 17 women, registered for the academic year 1959-60. Seventy-three registered in the first year of the five-year course. The average age of the student body was 23.1 years. The Ontario Veterinary College continued its policy of encouraging new Canadians, to seek the advantages of higher education. These students, in common with other Canadians, are listed below by province of residence.

Canada		Other Countries	
Alberta	37	British Guiana	4
British Columbia	18	Ethiopia	1
Manitoba	8	Ghana	5
New Brunswick	7	Malava	1
Newfoundland	1	Nigeria	4
Nova Scotia	3	Poland	1
Ontario	127	South Africa	4
Prince Edward Island	2	United Kingdom	Ö
Quebec	5	United States, Puerto Rico	7
Saskatchewan	35	West Indies	10

Other Courses

Registration in other courses given by the Ontario Veterianry College faculty is tabulated below:

Course	Group	No. of students
Anatomy	Applicants for advanced standing.	12
Veterinary Science 300	Ontario Agricultural College, An	i-
	mal Husbandry Option	8
Veterinary Science 301	Ontario Agricultural College, An	11 -
	mal Husbandry, Poultry Husbandry, Wildlife Management, Gener	u- a1
	Science and Entomology Option	ns 29
Veterinary Science 302	Ontario Agricultural College, Pou	
vetermary berefree 302	try Husbandry Option	5
Animal Health	- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0-
	ma Course, Second Year	
Animal Health		
	Toronto	72
Poultry Diseases		400
Paulton Diagona	try Husbandry, Short Course Ontario Agricultural College, Dipl	
Poultry Diseases	ma Course, Animal Husbands	my
	Division, Second Year	48
Artificial Insemination	Artificial Insemination Unit Tech	h-
	nicians	0.0
Elementary Diagnostic		
Bacteriology	Guelph General Hospital stude:	nt
	nurses	
Animal Health	Junior Farmers' Short Course	35
Graduate (Professional) Course		
Graduate (Professional) Course Diseases of Sheep & Swine	es	
(5 days)	Summer course for veterinarians	28
() - /		

MacNabb Memorial Library

First-year students were given a course in library orientation which outlined reading and study habits, the psychology of learning, examination techniques, and the mechanics of library usage. The veterinary-medical bibliography course usually provided for fifth-year students was deferred this year during the academic leave-of-absence of the Librarian.

The facilities and services of the MacNabb Memorial Library were increased during the year to meet the needs of an expanded graduate studies program, of research carried out in the newly organized Department of Physiological Sciences, and of the extension and service work in the Divisional Laboratories in Kemptville and Ridgetown. Library records reveal increases in the technical service provided for these three areas in most categories including translations, abstracts, literature searches and the provision of books and professional journals.

Horticultural Experiment Station

The past year has been marked by an increasing use of the facilities of the Station on the part of growers—personal calls, meetings of grower organizations, and summer picnic parties on the spacious and increasingly interesting grounds of the Station.

There were few Public Works projects in 1959-60. The roads on Victoria Farm were improved, the underground irrigation pipe line on the Home Farm was extended, and the disintegrated porch on the Inspection Building was replaced by a smaller one.

Brief notes are given below on a few of the Station's research projects.

Yeasts (Products Laboratory)

In the Niagara Peninsula the grape is one of the most important crops. More than half of the crop is sold as beverages which are manufactured by yeasts. Obviously, then, yeasts are commercially important and they receive specialized attention and facilities in this laboratory. Different "varieties" of yeasts can do different things and a year-round hunt is in progress for new, useful yeasts which are native to these areas. Yeasts are also obtained by exchange and purchase from other parts of the world. There is constant exchange of ideas and yeasts between this laboratory and industries that use them.

In addition to seeking new, useful yeasts, the more intimate details of relationships of yeasts to each other and their dietary requirements are receiving study. Such studies are classifiable as basic research.

Another facet of the yeast work is checking the effects of residues of new sprays or dusts on the subsequent fermentation of fruits bearing such residues. Occassionally, fantastically small amounts of residue can adversely affect fermentations.

The Role of Refrigeration with Soft Fruit (Products Laboratory)

Regfrigeration by ice and by mechanical devices has been familiar to the soft-fruit business for many years. But its use in the Niagara Peninsula remained static until about ten years ago when new construction became commonplace, especially within co-operatives and on fruit farms. Now there is evidence that fruit processors are becoming more interested in what refrigeration can do for them.

Controlled temperature is, from the technical viewpoint, the only agency or "tool" by which the after-harvested behavior and fate of fruits can be manipulated in desired directions. Certainly its potential has never been fully appreciated in the fruit business. The recent increase in facilities was due partially to a Regulation with regard to the cooling of peach for distant shipment, and in part, to the fruit-holding needs of large packing agencies. Possibly the processors' interest is in the direction of improving the quality of processed fruit.

There is still considerable shortage of refrigerated facilities in peach season, and in various phases of raw fruit distribution. This laboratory early appreciated the problem that much of the refrigeration would eventually be used only in the peach season. Therefore, attempts have been made to reduce capital costs by design-

ing storages for the special needs of peach. Intelligent use of adequate refrigeration is regarded in this Laboratory as the most important current commercial technical problem with soft fruits.

Peas for Processing

In Ontario approximately 20,000 acres are devoted annually to the production of shelled green peas for processing. While this farm enterprise can be a profitable one, seed-cost per acre is high and the crop is subject to many ills. With a view to focusing attention upon those factors which contribute to successful production, Bulletin 531, Peas for Processing, was published during the year.

Inheritance Studies in the Tomato

Progress in plant breeding can be limited or greatly retarded by insufficient knowledge of inheritance. Disease resistance and mature plant characters can be selected with a high degree of success in the seedling stage if they are linked with seedling characters. Furthermore, the inclusion of characteristics such as distinctive leaf shapes or flower colours will aid in identifying varieties and hence in maintaining pure seed-stocks.

Tomato-inheritance studies at the Horticultural Experiment Station deal with resistance to leaf mould (*Cladosporium fulvum*), chromosome mapping, and earliness.

Early work on leaf mould indicated that the 3 genes for resistance now found in the varieties Stirling Castle, Vetomold, and V121, are located on three different chromosomes. Since that time, new races of *C. fulvum*, to which these varieties are completely susceptible, have appeared. Recent research has been on varieties that are stabilized for resistance to all known races of *C. fulvum*. These lines obtain their resistance from such diverse species as *Lycopersicon hirsutum* (Vagabond and Vinequeen), *L. hirsutum* var. glabratum (V501), *L. peruvianum* (V542) and *L. pimpinellifolium* (V545). Each of these varieties contains one major gene for resistance or possibly two closely-linked ones. Most of these genes are linked with the genes for brachytic stem (br) and colourless skin (y) on Chromosome 1 but their exact location has not yet been established.

Many new characters have been discovered recently in the tomato. Most of these do not have any immediate economic value. They may, however, be useful in research or as genetic markers for economic characters. The Station is attempting to determine the linkage relations of a few of these genes. As part of a project co-ordinated by the Tomato Genetics Co-operative, the more precise mapping of the various genes known to be linked on Chromosome 10 is also being carried out.

Tomato breeders in Ontario are stressing earliness in their selection work but it has been very difficult to combine extreme earliness with acceptable fruit size and quality. Work at other Stations has shown a high correlation between first bloom and first ripe fruit. Following this lead, the date of first bloom of each segregant in many F_2 and backcross populations is being recorded and the data analyzed to determine whether certain genes may be associated with earliness. Preliminary data indicate that dwarf (d) and jointless (j_1) plants are later than the normal segregants. These two characters would be desirable in a variety for mechanical harvesting. High populations per acre may be necessary to warrant this types of harvesting and consequently, to reduce costs, direct seeding may become standard practice. If this happens, very early varieties will be needed in Ontario but it will be very difficult to combine exceptional earliness with the dwarf or jointless characters. On the other hand, self pruning (sp) plants may be a day or so earlier than standard plants and hence would have a slight advantage When direct seeded.

Verticillium-resistant Eggplants

Verticillium wilt (*Verticillium albo-atrum*) is a very serious disease on eggplant in Ontario. An effort was made to find resistant material suitable for breeding. Several lines obtained from the Foreign Plant Introduction Service of the U.S.D.A. are highly resistant. Plant and fruit characteristics on these lines are not suitable for Canadian markets. A backcrossing program is underway to incorporate disease resistance into varieties with acceptable horticultural characteristics. Considerable progress has been made and breeding lines are being made available to other breeders.

Weed-control in Asparagus and Tomatoes

For a number of years promising new chemicals for weed control have been tested. Emphasis has been on a few crops, particularly asparagus. Monuron has proven most reliable on asparagus, though several other materials will give good control under good conditions. Recently there has been considerable interest in chemical weed-control on tomatoes. Two materials, Amiben and Solan, have given excellent results. No recommendations are yet being made but much extensive tests will be conducted in 1960.

Royalvee Peach

A new peach variety resulting from Station breeding work was named in 1959. ROYALVEE (Sdlg. 46071) resulted from a cross between 39058 (Halehaven x Vedette) and Veteran, made in 1946. It matures two weeks before Redhaven or about Goldray season. August 5 is the normal time at Vineland. The last two seasons it ripened 3 to 4 days before Sunhaven. The fruit is medium-sized and bright all-over red in colour. The flesh is bright yellow, fairly firm, slow oxidizing, and good quality. It is classed as a semi-freestone but will come resonably free at full maturity.

Trees of Royalvee are very productive and, like Veteran, require heavy thinning in most seasons. Nine full crops in succession indicate hardiness in bud and ability to set fruit under adverse conditions. The bloom is large and showy, similar to Veteran, and the leaves have kidney-shaped glands. It is self-fruitful.

Several growers have bearing trees of Royalvee and they are enthusiastic about its performance.

Sweet Cherry Fruit-set

In Ontario sweet cherries frequently fail to set a commercial crop of fruit even with provision for cross-pollination and in the absence of damaging spring frosts. In sweet cherry, as in almost all of our fruit crops, fertilization must take place or there will be no fruit-set. Fertilization takes place in the embryo sac. Consequently, a study of the embryo sac contents and their ability to function normally in fertilization was undertaken.

Most of the work was done with the Windsor variety. When a Windsor flower first opens, the embryo sac is usually functional. Providing a large enough proportion of these become fertilized, a commercial crop can result. However, after the flower opens, degeneration of the egg cell begins. Fertilization follows pollination by an unknown period, perhaps at least a day and may be more, depending on weather. Therefore, pollination must occur as soon as possible so that fertilization can take place before many egg cells have degenerated. Thus the importance of providing for cross-pollination at the earliest possible stage of bloom should be emphasized.

Kemptville Agricultural School

The Kemptville Agricultural School had a most successful year with an all time high in total enrolment for the fiscal year ending March 31, 1960. Enrolment was as follows:

Agriculture—2 year course—Juniors	54
Seniors	46
Advanced Course in Agricultural Mechanics	8
Home Economics—Juniors	16
Seniors	9
Dairy Course	31

The new kitchen, used first in the fall term of 1959 and the enlarged dining room, provided much needed facilities for student accommodation but dormitory space is inadequate as fifty-nine students have had to sleep in the old army barracks and in the basement of the residence. Construction of a new Home Economics Unit, dormitory and class rooms, was started February 29, 1960. This will, when finished, provide separate dormitory space for the Home Economics students and allow the main residence to be used entirely as a men's dormitory.

Increased enrolment has meant expanded work for staff in classroom and laboratory. The reports of the several divisions which follow will indicate how demands for extension service have increased as the farmers of Eastern Ontario make greater use each year of the services which are available at the K.A.S. Many farm organizations visit the School each year, using the facilities for meetings and scarcely a week goes by in which some group does not visit the farm to observe some of the modern practices and equipment as well as see the livestock.

In addition to administrative duties the Principal has given all instruction in farm management to both junior and senior classes in agriculture as well as some animal husbandry to junior students. Since 1951 the Principal has served as Chairman of the Sire Selection Committee for the Eastern Ontario Cattle Breeding Association and from this centre some 67,000 cows were bred in 1959. These activities along with connections with the two Ottawa fairs and many other farmer organizations in Eastern Ontario assist in keeping close contact with what is taking place in agriculture in the area served by the school.

The Kemptville Agricultural School is grateful to some 35 organizations and individuals who have contributed in excess of \$7,000 in bursaries, scholarships and prizes. These have been of very great assistance and encouragement to our young farm people during this period of change in agriculture to more highly specialized production.

AGRICULTURAL MECHANICS DIVISION

During the year the work of this division consisted of lecturing on agricultural engineering subjects to the students in the junior and senior years in agriculture and the advanced course in agricultural mechanics during the school term and doing field work and agricultural engineering extension throughout the year.

The following subjects were taught during the school term: Drainage, mechanics, farm water supply and sewage disposal, electricity, refrigeration, hydraulics, instrumentation, meteorology, use of explosives, tinsmithing, metallurgy, forging, welding, plumbing, farm machinery, motor mechanics, woodworking, farm build-

ings, rope work, care and sharpening of tools, the care and operation of earth moving machinery, machine shop practices.

Students in the advanced course were taken on a number of field trips. These included a trip through the foundries of Dominion Engineering Works, Montreal, and trips to prominent farms in Eastern Ontario to inspect drainage, buildings, and farm management practices.

This division is also indebted to the following for placing with this division machinery on consignment for use in classes and demonstrations: Massey-Ferguson Company Limited, International Harvester Company Limited, Cockshutt Plow Company Limited, Allis-Chalmers Company Limited, J. I. Case Company Limited, Goodison Industries Limited, Beatty Bros., Niagara Brand Spray Company, Empire Brass Company Limited, Sass Manufacturing Company, F. E. Meyers Company Limited, DeLaval Company Limited, and Ketchum Manufacturing Company.

Extension and field work

The extension and field work conducted by this division consisted chiefly of drainage service, building service, 4-H tractor clubs, agricultural night classes and farm meetings.

Under drainage service, 360 farmers were called on and received drainage assistance of one sort or another. Blueprints for 154,450 feet of profile and systematic drainage plans for 2,652 acres of land were prepared for farmers in Eastern Ontario. Twenty-four tile drainage installations were inspected. During the year this division co-operated with the Agricultural Representatives in planning and conducting 31 drainage field days.

Under building service, 194 farmers were visited and given assistance and advice on ventilating stables, constructing new or remodelling farm buildings. Thirty-five building plans were prepared and distributed. Forty-five extensive building or remodelling jobs were completed and 81 advisory ventilation calls were made. Approximately 300 prints of farm building plans from the Canadian Farm Buildings Plan Service were distributed.

Other engineering extension included surveying and advising on the layout and installation of septic tank and sewage disposal systems. Septic tank forms are loaned from the office of the Agricultural Representative or from this division. Also, extension work in this division includes advising on the installation of water sytems, the layout, construction, and equipping of bathrooms, planning and checking electric wiring installations and assistance in adjusting and repairing farm machinery.

Six staff members of this division acted as instructors and supervised thirteen 4-H tractor clubs which had a total membership of 192 members. They attended club meetings, conducted 13 achievement days, conducted coaching classes and visited most of the members at their homes.

During the winter months this division co-operated with the Extension Branch, The Ontario Department of Agriculture, in supplying instructors at 4 night classes conducted at Sydenham, Marmora, Athens, and Vankleek Hill, on welding and electricity. These classes were held one night a week for 12 weeks. Attendance ranged from 10 to 15 in each class.

During the year, speakers were supplied for a number of farm meetings which included breed association barn meetings, county spray schools, council meetings, and ditch meetings. These gatherings were addressed on stable ventilation, misuse of electric wiring systems, drainage, other engineering subjects, and safety on the farm. Staff members of this division have also prepared and delivered a number of radio talks.

ANIMAL HUSBANDRY DIVISION

This division was responsible for lectures and laboratory work in animal husbandry with the agricultral students, and also responsible for the operation of the farm and extension work in animal husbandry. More emphasis this past year was placed on animal nutrition, both in lecture and laboratory work. The division in the inter-school judging competition at the Royal Winter Fair. A tour for the senior students in agriculture was arranged to visit outstanding farmers in Eastern Ontario to study their farm management practices.

More demonstration and testing work was again done on the farm this past year. Tests were as follows:

Plastics for silage

Two types of plastic were used to cover stacks of grass silage. A black polyethylene, six mill thick, and a white opaque type. The plastic again proved very successful, but the white material did not stand the action of the silage and the weather. One stack of silage was self-fed to the dairy herd in the fall with quite satisfactory results.

Black plastic was also used to cover a pile of bales of green crop. Very green alfalfa and red clover mixture was baled and put in a pile, packing the bales fairly close together. This silage was fed out in the fall with excellent results.

Surface silo

The surface silo was again filled with grass silage. When completed filling, the entire area was covered with four mill black polyethylene plastic. The plastic was weighted down and it would appear from the reduction in waste that covering with plastic paid.

Green Feeding or mechanical grazing

Green feeding was continued with the dairy herd to supplement the regular pasture program. Three acres of corn was sown—every run of the drill. This was cut with the flail type forage harvester and drawn to the cows while on pasture.

Hay

Through the co-operation of local machinery dealers, four types of hay conditioners were used in comparison, one against the other for drying time and leaf loss, and also comparing them against unconditioned hay. In all cases, with all types, 24 hours could be cut from drying time, under early haying conditions. Hay conditioned with the crusher, smooth roll type, dried slightly faster than the crimped hay, but the difference was very slight. Comparing leaf loss, the type was not nearly as important as the proper operation of the machine. They hay conditioner in combination with the hay drier makes an excellent combination for the storing of top quality hay.

Livestock

The demand for breeding stock from the North Country Cheviot flock again exceeded supply.

Twenty beef bulls completed the test under the Advanced Registry Policy for beef cattle. The division was responsible for the supervision and care of these bulls on test.

The dairy herd, Holsteins, Ayrshires and Jerseys, were used to a considerable

extent by the students for classroom work and by a number of groups visiting the school. The following is a summary of the records completed by the herd during the year. All records are 305 day division.

Herd Average Breed	No. Completing Test	. Lb. Milk	Lb. Fat	Average Test
Holstein	19	13,678	555	4.05
Ayrshire	6	9,303	385	4.13
Jersey	4	8,106	454	5.60
Herd Index	Milk	Fat		
Holstein	132	146		
Ayrshire	127	127		
Jersey	129	192		

At the time of the last classification of the three breeds, with 29 animals in the herd, all but 2 were classified 'Good Plus' or better with one Holstein cow being classified 'Excellent'.

Considerable time was spent during the year for extension work. The following is a summary of the meetings attended:

Meetings addressed	37
Fairs, Achievement Days and Judging Competitions	12
Meetings as Committee member	
Groups visiting farm only	12
Radio broadcasts	

Assistance was given in the following ways:

- 1. Secretary, Ottawa Valley Sheep Breeders' Association.
- 2. Secretary, Eastern Ontario Yorkshire Breeders' Association.
- 3. Director, Ottawa Winter Fair, and Vice-Chairman of Swine Committee.
- 4. Member of the Sheep and Swine Committee of the Central Canada Exhibition and the Ottawa Winter Fair.
- 5. Member of Sale Committee, Ottawa Winter Fair.
- 6. Member of the Junior Committee of the Ottawa Winter Fair.
- 7. Member of the Ayrshire Bull Buying Committee for the Eastern Ontario Cattle Breeding Association.
- Member of the Committee of the Eastern Ontario Soil and Crop Improvement Associations.
- 9. Numerous requests for information on livestock and livestock feeding were answered by letter and office calls.
- 10. Six visits were made to prospective students during the year.

CHEMISTRY, SOILS and FERTILIZERS DIVISION

The activities of this division are summarized under the following headings:

Lectures and laboratory classes to regular students

Lectures in chemistry, soils, fertilizers and mathematics were given to the junior and senior classes in agriculture; mathematics, soils and farm planning to the advanced course in agricultural mechanics; and chemistry to the junior and senior classes in home economics. Laboratory periods in chemistry, soils and fertilizers associated with the lecture periods were conducted.

Extension

During the calendar year 1959 a total of 3,506 samples of soil was received and tested. Rapid determination tests were made for reaction, organic matter, phosphates, potash, calcium and magnesium. Reports covering the recommendations for fertilizer use, agricultural limestone requirements and cultural practices were forwarded covering samples received, with duplicate copies forwarded to the respective agricultural representatives.

Demonstrational and experimental field work

Comparative tests using a complete fertilizer with urea and ammonium nitrate which were laid out in the fall of 1958, with the nitrogen applied in the spring of 1959, were conducted in Hastings and Renfrew counties. The results obtained indicated that urea possessed a greater and longer lasting effect on the second growth, with ammonium nitrate providing a greater growth result in the early part of the season but dwindling off by mid season.

During the year 34 meetings were attended for the discussion of problems

related to soils, lime and fertilizer use.

DAIRY DIVISION

Instruction

Two new types of courses were presented for the first time last year. One of these was a course of instruction for bulk milk tank truck operators to help them become qualified as bulk tank milk graders. The course was given on a one-day-a-week basis for six weeks, and there were 16 regular and 3 part-time students registered.

The second new course was a one-day spring conference for milk plant operators. Bulk handling of milk was one of the main subjects discussed. Approximately 125 were in attendance.

Twenty-seven students attended the 1960 dairy course with an additional four registering for the first three weeks' work on milk testing and fluid milk plant operations. A donation of \$50.00 was received from the Ontario Milk Distributors' Association for the first time as an addition to the Dairy School prize fund.

Changes in the Dairy building and its equipment

A new milk testing laboratory was established in a basement room formerly used as a store-room. A small office off the cheese laboratory has been converted to a special room for starter-making.

New equipment purchased included a 100-gallon milk pasteurizer, a refrigerated incubator for lactic cultures, an 800-pound dial scale and lyophylizing apparatus for the preservation of bacterial cultures.

Experimental work

The following are brief descriptions of the three main projects of 1959: Variations in the natural inhibitory properties of milk.

All raw milk contains varying amounts of substances which tend to delay the multiplication of lactic and bacteria. These substances lose these inhibitory properties when the milk is heated to 165°F. for 20 miutes.

To learn to what extent these materials were present in different milks, approximately 100 patrons' samples from 4 different cheese factories were examined once during May and a second and third time during June and September. The

May and June raw milk samples were more inhibitory than those examined in September. The samples from one factory were less inhibitory than from the other three. Variations from herd to herd were not great. No evidence was found to indicate that these inhibitory properties were related to mastitis or mastitis treatments.

The effect of rising cheddar cheese curds after milling.

Four different vats of coloured, pasteurized milk, Cheddar cheese were each divided into four portions following milling and the curds subjected to different rinsing processes. Rinses consisted of water, lime water, and sodium chloride brine at different concentrations, temperatures and for different periods of time. These treatments were aimed at removing the film of fat which is often present on milled curd and which prevents the curd from fusing properly into a close textured cheese when pressed.

Compared to untreated controls, several of the treatments resulted in improved cheese, particularly lime water, 10% brine at 80°F. for 5 minutes, and 5% brine at 80°F. for 10 minutes. The fat contents of the press wheys from the rinsed curds were much lower than the controls.

Methods of detecting the presence of citric-acid-fermenting bacteria in lactic starters.

Organisms capable of converting citric acid to diacetyl are desirable in buttermilk starters but are a suspected cause of open texture in pasteurized and heattreated milk Cheddar cheese. During the past year four methods of determining the gas-producing tendencies of lactic starters have been studied in attempts to assess this aspect of the cultures in our collection.

Laboratory services and other activities

During the year lactic cultures were again furnished to cheese factories and other dairy plants, 387 requests being filled. Reports indicate better performance by these cultures than in 1958.

Tests for butterfat content were made on 355 samples of milk or other dairy products, while a number of additional samples were also specially examined or

analysed.

Visits to a number of plants were made in response to requests received from fieldmen of the Dairy branch.

The head of the Dairy Division attended two meetings of the Ontario Dairy Research Committee, one of the National Dairy Council Research Committee and was a delegate to the American Dairy Science Association annual meeting at Urbana, Illinois.

Publications

Gas Production by Lactic Starters, O. R. Irvine, Can. Dairy and Ice Cream Journal 38, (4) 44, 1959.

Uniform Milk Grading under New Ontario Regulations, O. R. Irvine, Ont. Mk. Producer, 34, (10) 18-20, Apr. 1959.

New Aids Now Available for the Production of Good Milk, O. R. Irvine, Ont. Mk. Producer, 34, (11) 10, May, 1959.

Dairy Science Education in Canada — III — The Dairy Division of the Kemptville Agricultural School, O.R. Irvine, Can. Dairy and Ice Cream Journal 38, (6) 46, 1959.

Bacteriological Survey of Water Supplies of Milk Plants in Eastern Ontario, O. R. Irvine and M. E. Beach, Can. Dairy and Ice Cream Journal 38, (9) 36, 1959.

ENGLISH AND ECONOMICS DIVISION

Instruction

Completion of an entire year's actual farm accounting project with students has proven useful both for practice with the Ontario Farm Account Book and as a basis for farm business analysis. The farm economics course has intensified student study of marketing and farm organizations most closely related to this function.

Major essays were written by all students in Co-operation studies. Two seniors won a trip to the Ontario Credit Union League annual meeting at Toronto in March.

Instruction was given in English, civics, public speaking and public relations.

Extra-curricular activities included an amateur variety concert, Christmas carollers and carol concert, public speaking contest, school paper, yearbook and literary society programs, in addition to special film presentations.

Economics extension

Another year's co-operation was completed with the Ontario Farm Economics Branch in the tile drainage profitability study in Eastern Ontario. Assistance in farm accounting and other farm business problems has again sharply increased.

Many talks were given to agricultural organizations on agricultural problems.

Public Relations and School administrative tasks

The two staff members of this division assisted in public relations work by arranging liaison resulting in 528 secondary school students visiting the K.A.S. for planned tours and demonstrations.

Press and radio releases, exhibits, advertising, tape recordings, official calendar, scholarships, bursaries, awards, staff secretarial duties, graduation details and many duties of a general administrative nature have been shared by this division.

The Library

The temporary hut housing the library is inadequate for the requirements of recent years. Library hours have been increased to offer service to the students six days and five nights a week. Cataloguing and indexing continue with this specialized task being largely allotted to the stenographer for this division.

FIELD HUSBANDRY DIVISION

Increased demands to participate to a greater extent in the Ontario Department of Agriculture crop testing program, and to provide additional extension service, resulted in the appointment of Mr. Neal Stoskopf to the staff of this division. In addition to teaching the courses in field husbandry, and in weeds outlined in the K.A.S. calendar, the staff were actively engaged in extension and experimental work.

Summary of extension work in field husbandry

Farm and other agricultural organizations were addressed on 41 occasions. These included annual meetings and summer twilight meetings of several County Soil and Crop Improvement Associations, seed fairs, field days, barn meetings, night schools, conferences and conventions.

Assisted in planning the program and in staging the Annual Crop Improvement Conference and Weed Control Conference at the K.A.S.

Judged at seed fairs including the Ottawa Valley Seed Fair, The Royal Winter Fair, and the finals of the Ontario Pasture Competition.

Served on several committees including: Chairman of the Eastern Section of the National Weed Committee; secretary of the Eastern Ontario Soil and Crop Improvement Committee; Ontario Advisory Committee on Herbicides; Seed Committee of the Royal Winter Fair; the Ontario Corn Committee, and the Ontario Committee on Field Crop Recommendations.

Considerable time was required in answering numerous requests for advice and information on crop production and weed control problems by correspondence, telephone, office calls and personal visits.

Several radio broadcasts were prepared and recorded for the Ontario Department of Agriculture Radio Service, and local radio stations in Eastern Ontario. Assistance was provided in the preparation of circulars and bulletins.

Experimental work in field husbandry

In order to co-ordinate the experimental work undertaken at the K.A.S. with that being done at other experimental stations in the Province, it has been necessary to serve on several committees. This committee work required 21 days in attendance at meetings and an equal amount of time to assemble and prepare experimental data.

Because of the limited facilities and equipment available to the field husbandry division at the Kemptville Agricultural School, it has been necessary to rely on the excellent co-operation and assistance received from the Ontario Agricultural College and the Central Experimental Farm in processing much of the material and data from the tests.

The following statistics will give some indication of the nature and scope of the experimental work under way in the division:

- 916 plots in 12 tests of cereal grain varieties.
- 88 plots in 2 tests of soybeans and white bean varieties.
- 512 plots in 2 tests of corn hybrids.
 - 52 plots in 2 tests of alfalfa varieties.
- 28 plots in 1 test of birdsfoot trefoil varieties.
- 56 plots in 1 test of grass varieties.
- 252 plots in 5 tests of hay-pasture mixtures.

Results from the foregoing variety and mixture tests were used in making the recommendations for Zones 4 and 5 in Circular 296, "1960 Field Crop Recommendations for Ontario". These data are also used in supporting the licensing of new varieties and hybrids.

In addition to the crop testing program, seed of both 'recommended' and 'promising' varieties is assembled for outside tests of grain corn, silage corn, soybeans, oats, and barley. These plots are sampled, yields calculated and data supplied to County Soil and Crop Improvement Associations. In order to focus attention on the use of earlier maturing hybrids for high quality corn silage, twenty-eight tests were conducted in the fourteen counties of Eastern Ontario to compare an early, medium and late maturing hybrid with the following results:

Average for Eastern Ontario	Percent Moisture at Harvest	Yield Per Acre Green Weight	(Tons) Dry Weight
Early	68.7	16.6	5.09
Medium	73.7	19.4	4.96
Late	76.8	21.5	4.89

Herbicide evaluation

Simazine and Atrazine were compared at the rate of 2 lbs. of active ingredient per acre as pre-emergent herbicide treatment on corn with no cultivation and with two shallow cultivations with the following results:

Treatment	% Moisture of Corn at Harvest	Yield Per Acre (Tons) Green Weight
1. Atrazine — no cultivation	63.7	13.2
2. Atrazine + cultivation (2)	63.7	14.5
3. Simazine — no cultivation	63.7	13.7
4. Simazine + cultivation (2)	63.7	14.3
5. No herbicide + cultivation (4)	63.7	13.7

From these data it is apparent that Simazine and Atrazine were equally effective in controlling weeds in corn. Excellent weed control was obtained in all treatments. A slightly higher yield, .9 tons per acre was obtained from the sprayed plots receiving two shallow cultivations.

HOME ECONOMICS DIVISION

During the school term, from October till April, instruction in home economics was given in the one year homemaker course and the two year diploma course. Students were enrolled from fourteen counties.

Regular classes of instruction were given, along with practical work, in child care, health education, home nursing and family living; applied arts, clothing, home furnishing and textiles; home management, foods and nutrition. Instruction in civics, bacteriology, chemistry, English, floriculture and woodworking was also made possible through the co-operation of the respective divisions. Films and field trips helped to supplement regular class room instruction.

Opportunity for display of many phases of home economics study, as well as livestock showmanship, was given at the K.A.S. Royal Show in March. The annual spring fashion show also displayed achievements of home economics students to a large group of interested men and women from the school and the community. Both these events, we feel, are worth while experiences in group participation and training in accepting of responsibilities.

Worth-while positions, mainly as food supervisors in different types of institutions, are always available to graduates of the two year course, many of them gaining experience in working along with qualified dietitians.

Supervision of the dining hall and furnishing of students' residence is the responsibility of this department. Day to day supervision here is carried out by a graduate of our home economics course. Much improved facilities for meal service, and considerably larger dining room accommodation were possible this year, with the use of the new kitchen building providing more adequate equipment and working area.

Construction of the new home economics building now under way will provide for much better teaching facilities, and modern attractive residence accommodation.

Many visiting groups were entertained in the interval between April and October, their stay in residence varying from one day to four weeks in duration. The total number of meals served to students and visiting groups was approximately 66,500.

Extension services include:

- Talks to various W.I. and women's groups, chiefly 4-H groups.

- Women's Institute holiday group at the school.

 Open house programs for visiting secondary school students—a series of visits on four consecutive days.

 Visits to prospective students and to W.I. meetings to acquaint these groups with facilities of the School and opportunities available to graduates.

HORTICULTURE DIVISION

Instruction

During the school term a course of lectures, laboratory work, and practical instruction was given to the students in agriculture, covering such subjects as fruit growing, vegetable culture, floriculture, plant diseases, botany, destructive and useful insects. As well a series of lectures on ornamental horticulture was given to the students in home economics.

Demonstration and extension work

During the summer months, the horticulture division is responsible for the maintenance of 27 acres of campus, 15 acres of fruit trees, and about 2 acres of small fruits and garden.

The apple orchard contains many varieties, planted as a study in suitability and hardiness. Some trees are grafted onto French crab roots, others on hardy Russian root stock, and still others on hardy frames. These growing techniques are an attempt to demonstrate methods of preventing winter damage. The winter of 1958-9 was the most severe since 1933-4. During the spring and summer of 1959, winter damage became evident in quite a number of varieties. The hardy roots and frames did not prevent damage to tender fruiting varieties. The varieties Linda and Hume were for the most part killed or severely damaged. Joyce, Delicious and Talman Sweet were badly damaged on the young wood. They were very late in leafing out, but after the cambium had a chance to produce new xylem, they seemed to recover. The fruit from McIntosh did not seem to be damaged.

A number of fungicides were compared for apple scab control in the School orchards. In one area a new material 'Cyprex' was used throughout the season, in another 'Dichlone'. A third program consisted mainly of Glyodin or Glyodin plus Mercury followed late in the season by Captan. Two of the programs were highly effective, but the 'Dichlone' schedule fell down. When spraying operations finished, all trees appeared to be free of apple scab, but by picking time a large amount of 'pin-point' scab had developed in the area sprayed with 'Dichlone'. The rest of the orchard remained free of scab.

During the summer months, the apple spray letters for local growers originate from this division. In 1959, nine of these letters were sent to growers. As well, some 176 visits were made to various farms to assist them in their apple growing program.

Extension in ornamental horticulture covered a wide range of activities. Forty-two public meetings were attended in which an active part was taken. As well, some 137 calls were made to individual home owners to provide advice on home improvement. Landscape advice was provided for 27 public buildings such as schools, churches, and community centres. Detailed landscape plans were provided for some of these institutions.

POULTRY DIVISION

Lectures and demonstrations in poultry, farm meats and marketing were given to the junior and senior students in agriculture.

The K.A.S. poultry flock consisted of approximately 7,000 chickens and 250 turkeys, with a laying flock of about 1,500 birds carried over the winter.

Over a number of years more attention has been given to breeding and maintaining one main strain of leghorns for egg production. Several other strains have been crossed with the main strain. This resulted in useful material for student work because it showed the variation in feed consumption and egg production of the different crosses. A flock of White Rock and White Cornish cross is maintained and produces excellent birds for broilers, and for heavy roasters when mature.

A quantity of eggs are sold in the spring for hatching purposes. Meat type birds are killed and processed at the School. This provides material for practical work in dressing, eviscerating and packaging.

Extension work carried on during the fiscal year consisted mainly of Poultry Club Achievement Days and visits to farms to render assistance in feeding and management problems. Several demonstrations were given in debeaking, culling and caponizing of poultry. Other extension work included -

- Annual Poultry Field Day for Eastern Ontario held at the K.A.S.

— The banding and blood-testing of turkeys in Eastern Ontario was done by personnel of this division during the fall of 1959.

— Assistance was given by judging turkeys at the Royal Winter Fair, Toronto and the judging of poultry classes at four fall fairs.

The co-operation and assistance received from the Regional Veterinary Laboratory personnel with respect to poultry disease problems and from the agricultural mechanics staff with respect to building and ventilation problems is much appreciated.

Western Ontario Agricultural School and Experimental Farm

During the past year activities on the campus have been more numerous than in the history of this institution. An expanded applied research program, a sharp increase in visiting groups, and an enlarged enrollment have all placed a heavier demand on personnel time.

The New Livestock Building which was opened on January 11, 1960 by the Minister of Agriculture, the Honourable W. A. Goodfellow, will contribute to both improved instruction in Livestock and Meats, as well as providing a medium for a general extension program.

INSTRUCTION

Enrollment appears to be increasing gradually. Total registration for the year was 156 — 95 in the Junior Year and 61 in the Senior Year.

Both average age and academic qualifications of the students are rising each year. On registration, the Junior Year students had an average age of 18.5 years, and 51% had at least four years High School training.

There appears to be a trend to more graduates seeking employment in Agricultural Industry—approximately 35%—and yet instruction is altered only to meet the changing trend in Agriculture as such instruction is basic for both practical agriculture and industry.

Again the Western Ontario Agricultural School appreciates the assistance and co-operation of the following:

- 1. Agricultural Engineering Extension Service for instruction in Agricultural Mechanics and Mathematics.
- 2. Personnel of the Regional Veterinary Laboratory for instruction in Animal Health and Bacteriology.
- 3. Agricultural Representatives for instruction and assistance on various occasions.
- 4. Ontario Department of Lands and Forests for their personnel's assistance in instruction and field trips.
- 5. To all other groups and individuals who assisted through lectures, scholar-ships, prizes, etc.

ACADEMIC FUNCTIONS

Graduation

On Tuesday, May 12, 1959, the Annual Graduation Exercises were held in the Auditorium, with Dr. C. D. Graham, Deputy Minister of Agriculture, delivering the address. Mr. R. G. Bennett, Chief Agricultural Officer, assisted in the Graduation by presenting the diplomas to the Graduates.

Baccalaureate Service

On Sunday, March 13, 1960, the Annual Baccalaureate Service for the Graduating Class was held in the Auditorium. The address was delivered by Rev. W. A. Young, Public Relations Officer and Chaplain, Ontario Agricultural College.

Student Activities

As training for future service, the students are organized to perform certain functions and carry responsibility as extra-curricular activities, such as,

Student Council—which assists in general organization, discipline, and social fuctions.

Literary Society—which sponsors public speaking, debates, skits, etc.

Athletic Society—which organizes and administers sports program.

Year Book—a Senior Year project, financed by the students through the sale of advertisements.

W.O.A.S. Review—held on Thursday and Friday, March 3 and 4, and which constitutes a show window of some of the activities during the academic year. This event attracted approximately 1200 visitors.

EXTENSION

Extension services may be grouped into 2 categories:

- 1. Those services in the field, at the request of the Agricultural Representatives.
- 2. Individuals and organized group visits to the campus.

Both services are expanding each year.

Tours and overnight accommodation, when requested, are organized for such groups as: Soil and Crop Improvement Associations, Junior Farmers' Associations, County Farm Management groups, 4-H Clubs, Secondary Schools, Horticultural Societies, Women's Institutes, etc.

The W.O.A.S. served in capacity as host to such organizations as: Provincial Ministers and Deputy Ministers of Agriculture, Principals and Teachers of Agriculture in Secondary Schools of Southwestern Ontario, Ontario Hereford Field Day, Horticultural Societies of District 11, Ontario Potato Growers' Association, Advisory Fertilizer Board, Delegates from Yugoslavia, Rumania, Pakistan, Indonesia, European Agricultural Advisors, Bank Managers, Breed Meetings, etc.

The 22nd Annual Farmers' Week was held from January 11-15 in the New Livestock Building. The improved facilities contributed greatly to the success of such an undertaking. Prominent Ontario and Michigan Agriculturalists, as well as our staff personnel, addressed the gatherings. Total attendance was over 2,000.

RESEARCH

Because of its location, the school plays an important role in the field of applied research. Some 80 acres of land being devoted to the purpose.

Livestock

The Livestock Division has been responsible for the following activities:

- 1. Management of the Farm.
- 2. In charge of all livestock work at the School, as well as a portion of livestock extension in Southwestern Ontario.
- 3. Classroom instruction with the Diploma Course students in subjects relating to farm management and livestock.

Farm Production

Crops under cultivation in 1959:

Winter Wheat	-	24	acres
Spring Oats	-	58	acres
Silage Corn		15	acres
Grain Corn		37	acres
Hay		57	acres
		191	acres

The balance of the general farm is devoted to pasture for livestock maintained at the School. All of the grain, silage and hay is fed to the livestock.

Crop yields were reduced considerably because of low rainfall during the months of June and July.

Dairy Cattle

Two breeds of dairy cattle are maintained at Western Ontario Agricultural School. Record of Performance Averages were as follows in the past year:

	MILK		BUTTERFAT	
	Lbs.	BCA	Lbs.	BCA
Holstein-Freisian (12 Records)	13,795	130	522	135
Guernsey (6 Records)	10,600	147	540	149

The Dairy ration being used is made up entirely from home grown grains using corn and cob meal, oats and raw soybeans as protein. Excellent quality roughage in the form of alfalfa hay and corn silage is also fed.

Beef

Shorthorns and Hereford herds are maintained as a cow calf proposition. These cattle are maintained on a roughage program.

During the months of February, March and April, fourteen head of Shorthorn steers and heifers have been on a roughage feeding test. Seven head received two pounds of grain per head per day along with all the good quality conditioned hay they can consume. An equal number of cattle are being fed on a similar plan only receiving unconditioned hay.

Results to date show an increase in weight of .55 lb. per head per day on cattle fed unconditioned hav.

Beef Bull Testing

In November, 1959, a new Advanced Registry Station was built on the farm at W.O.A.S. Eighteen bulls went on test during the winter months. These consisted of 11 Herefords, 6 Shorthorns and 1 Aberdeen Angus.

Sheep

Breeding flocks of Southdowns and Suffolks are maintained at the School primarily for use in classroom instruction. The Southdown Ram used at W.O.A.S. has sired the Grand Champion Market Lamb the past three years at the Royal Agricultural Winter Fair.

Swine

Although demand for improved breeding stock remained strong in the area, sale of breeding stock from the W.O.A.S. herd was discontinued due to a break in health.

As a result, steps have been taken, in co-operation with our Regional Veterinarian, to tie in as a pilot project, with a Disease Free Herd Program being developed under the guidance of Dr. C. Rowe, O.V.C., Guelph. In addition one trial of raising baby pigs aseptically on an artificial nurser and creep feed was tried. Although losses were 80%, nonetheless a disease free boar was successfully raised without colostrum to a weight of 57 lbs. in 56 days. Litter mates left on the sow developed virus pneumonia.

A new farrowing barn, containing farrowing crates, farrowing stalls, farrowing pens with a built-in stall, and several variations of farrowing pen sizes for study of birth to weaning losses has been completed. This will be used to farrow winter litters, while the Disease Free Herd Program entails summer farrowing on range.

Cross-breeding continued the early part of 1959, and despite being raised alongside infected pigs, no sign of disease is in evidence in the cross-breds.

The Berkshire and Yorkshire Crossbred sows were crossed with Lacombe and Landrace boars. Average weight of both these crosses (56 days) was more than 10 lbs. heavier than the average of the better purebred Yorkshire litters.

Extension

The demand for assistance on livestock management problems continues to grow. This assistance has been supplied through meetings and farm visits.

Personnel of this Department has judged 29 livestock shows including 4-H and breed shows at fall fairs.

FARM CROPS

During 1959, construction on the new Field Husbandry Building was begun. The increased program of research and extension plus the crowded condition of existing classrooms made additional space necessary. Facilities for drying and processing of experimental material as well as laboratories, offices and classrooms will be available. All of the division's staff will be situated in one building.

The duties of this Division may be summarized as follows:

- 1. Research into crop production practices and varieties.
- 2. Extension to farm groups, including demonstrations, tours and meetings.
- 3. Instruction in crops and crop production.
- 4. Production of seed of varieties adapted to the area.

Research

The Division has under cultivation approximately sixty acres of land, including Brookston Clay Loam, Burford Loam and Fox Loam soil types.

The extremely severe winter of 1958-1959 destroyed much of the material in the winter barley and winter oat areas. In most cases, it was necessary to work the land and resow to spring crops. The winter oat strain propogated since 1949 was lost for the first time. However, differential winter killing was evident in barley and wheat and valuable information was obtained for the first time in many years.

Spring grain crops were quite high yielding and helped compensate for the loss of winter crops.

July and August were extremely dry which made it necessary to use irrigation to save the corn and sugar beet tests. Yields were disappointing for the latematuring crops.

Many of the forage tests were injured by winter killing and yields obtained were somewhat unsatisfactory for obtaining comparative information.

Among projects discontinued in 1959 were a Crop Sequence study and a Tobacco on Clay project. Sunflowers were added to crops under study and a program to determine the relative value of the hybrid corn varieties being sold in Ontario was begun. Both of these are long term projects.

The number of trials situated off the Experimental Farm were greatly increased during the year. Climatic conditions determined the location of these trials in most instances.

Variety and mixture trials accounted for over 7,500 plots grown in 1959. A summary is as follows: Wheat — 2,452; Barley — 692; Oats — 612; Soybeans — 340; Corn — 1,742; Sunflowers — 72; Sugar Beets — 84; Field Beans — 144; Potatoes — 240; Tobacco — 32; Fertility, Corn — 48; Crop Sequence, Soybeans — 288; Forage Crops — 791.

Extension

Demonstration strips of common crops of Southwestern Ontario were again set out with the co-operation of the County Agricultural Representatives, Soil and Crop Improvement Associations and farmers on whose land the strips were established.

Plots established included: Corn — 75; Soybeans — 42; Wheat — 25; Oats — 35; Barley — 18; Field Beans — 12; Forages — 25.

Members of the Division were called upon to speak at many meetings and tours as well as attend meetings and conventions in addition to other extension duties.

Seed Production

Only Field Beans were produced for sale as seed in 1959. Foundation stock of two varieties were sold to various seed producers for multiplication as seed for sale. The program of this section has been reduced to allow more time and land for research.

Instruction

J. D. Curtis, fieldman, Field Crops Branch was appointed and stationed at the School during the year. Appreciation is extended to the Field Crops Branch for assistance given in instruction by its staff member.

SOILS DIVISION

The activities of the Division are extension and research, soil analysis and fertility recommendations, as well as instructional work to the Diploma Course students.

Extension

In co-operation with the Ontario Department of Agriculture and the Ausable River Conservation Authority the first Land Judging Competition was initiated and held in Lambton County.

A number of fertility demonstrations were carried out in the local counties in co-operation with the Soil and Crop Improvement Association. These demonstrations included the nitrogen, phosphorus and potash response on sugar beets and grain corn. The need for, and response to various kinds and amounts of limestone applied to a grass-legume pasture was also demonstrated.

On the Experimental Farm demonstration plots were carried out on corn, soybeans, hay, wheat and oats.

During the year approximately four dozen meetings and six crop tours were attended. Also, three radio recordings were made. Some sixty-five farms were visited on soil advisory service calls involving such problems as rotations, fertility, disease, management and conservation practices.

Research

This past year the first crop year for the new soils area on the Experimental Farm. A good deal of the area was planted to millet, in order to get the nutrient level of the plot areas as uniform as possible. However, a study of the nutrient response on soybeans, wheat and corn, using varying rates of nitrogen, phosphorus and potash was begun.

Irrigation and fertility tests on burley tobacco were continued on medium textured sandy clay loam.

In co-operation with the Soils Department at the Ontario Agricultural College a fertility trial on grain corn was carried out. Fertility work with soybeans was started in the fall of 1959. Both the corn and soybean co-operative trials are used in soil test evaluation and calibration work.

In the summer of 1959 a Corn Stand Survey was conducted on some sixtyseven farms covering thirty-one townships in five Southwestern Ontario Counties.

Soil Analysis

More than eight hundred farmers used the soil testing facilities provided by the Experimental Farm. A total of approximately twenty-three hundred samples were analysed and some thirty-three hundred fertilizer and lime recommendations were sent out to area farmers.

Lecture and Laboratory Classes

Lectures in Soils and Chemistry were given to the First Year Diploma Students. The Second Year Students received lectures and laboratory classes in fertilizer and soil conservation.

POULTRY

1. Laying Hens

(a) The laying test involving 12 strains or types of laying hens available in Western Ontario was completed September 3, 1959, with the following results:

		500 day*	Hen Housed*	Lbs. Feed*
No. Entries	Type	Avge. Body Wt.	Egg Production	Per Doz. Eggs
10	Light	4.49 lbs.	214.76 eggs	5.60 lbs.
2	Heavy	6.04 lbs.	164.75 eggs	7.56 lbs.
Test Average		5.44 lbs.	206.43 eggs	5.93 lbs.
(*All results are	averages)		-88-	0.00 100.

As this was a demonstration, all individual results were coded and sent to the Breeders concerned as confidential.

The above results show that light type laying hens are most efficient in the use of feed in egg production. This is due to the smaller body size of the bird requiring less feed for maintenance. Higher egg production per bird and more efficient use of feed makes the lighter type bird more profitable as an egg producing bird. Wide price spreads between different weights of market fowl could offset some of the loss incurred with heavy hens and their less efficient egg production by making the salvage value of the heavy hen much higher than that of the light type. This was not so during the past year.

- (b) A demonstration and production comparison experiment was set up in October involving laying cages, slatted floors and two pens with litter floors. Laying hens on litter were allowed 1.5 sq. ft. and 2 sq. ft. per hen, while hens on the slatted floor were allowed 0.9 sq. ft. per hen. Egg production and mortality records will be kept for a twelve month production period. This demonstration involves over 700 hens.
- (c) Restricted feeding of growing pullets for egg production is becoming popular in Western Ontario. An experiment was started in March of 1960 in cooperation with Dr. S. J. Slinger, O.A.C. Poultry Science Department. This experiment involves 1,600 pullets. Purpose of the experiment is to determine how much non nutritive filler must be added to an all mash growing feed to accomplish a 70-80% feed restriction. All treatments will be replicated 3 times. Some pens will be restricted in total feed intake while others will be full fed a diet containing varying amounts of non nutritive filler.
- (d) One pure strain of White Leghorns is maintained on the farm for breeding work.

2. Capons

Four hundred cockerels were obtained from Kemptville Agricultural School for a comparison between surgical caponizing and chemical caponizing using liquid hormone injection and hormone implants. Final results show no difference in average weight gains for the three treatments over an 8 week period.

The mortality risk from surgical caponizing is greater than that of hormone implants or injection. Since the completion of this experiment, the use of hormones in poultry has been banned. Treatments were discontinued eight weeks before marketing.

3. Turkeys

Six hundred turkey poults were purchased and maintained on the farm to provide poultry meat for the dining hall and processing experience for students.

Eggs laid by turkey breeder hens were hatched and the poults raised. Hatchability was very poor because of low fertility.

All turkeys on the farm were slaughtered for meat after a serious outbreak of sinusitis.

One hundred and fifty large white poults were purchased to determine feed efficiency of this type of turkey for broilers.

Livability was excellent. Turkey broilers were ready for market at eleven weeks of age with a feed conversion of 2.36 lbs. of feed per pound gain and an average weight of 9.17 pounds. Finish was sufficient for Grade A.

These results are considered exceptional and show that this particular strain of large white turkey is satisfactory for the production of turkey broilers.

ACTIVITIES

Students received instruction in all phases of poultry management and marketing. The completion of the new processing plant with its up-to-date processing and freezing equipment was enjoyed for marketing classes.

A total of 6.5 tons of poultry meat was processed at the farm during the year. Of this total, about 3.5 tons were processed by students in market classes involving killing, evisceration and packaging of roasters, fowl, large turkeys and turkey broilers. Some 7038 turkey breeder hens and toms were selected, banded and blood

samples taken in co-operation with the O.A.C. Poultry Science Department pullorum testing program.

Three poultry barbecues were provided for visiting agricultural groups.

The following meetings were attended: Agricultural Engineers, tour of poultry and livestock farms in New York State, Poultry Parade of Progress, London, Department of Agriculture exhibit C.N.E. Toronto, Poultry Industry School, O.A.C., Guelph, Ontario Turkey Association Convention, Hamilton, Communications Course, O.A.C., as well as the annual diploma course instructors conference at Kemptville, Ontario. Local activities included Poultry judging at local fairs and speaking to service clubs.

During the year, it was found necessary to add one extra man to the poultry staff to care for the chickens and turkeys on the farm.

HORTICULTURE AND BIOLOGY

Staff & School

Mr. J. J. Neilson retired on October 1st, 1959 and Mr. R. H. Brown joined the staff September 1st, 1959. Horticulture, Botany and Entomology were taught during the school year.

Extension

The major part of extension was on herbicidal use for lawns, vegetables and field crops, together with eradication of hard to kill perennial weeds in crop land. In the first three months of 1960, sixteen meetings were attended in which talks were delivered on weel control. Soil and Crop Improvement meetings were attended in the five counties and Huron during the growing season to discuss herbicides. The pea crop was toured to assess the use of new herbicides.

Another important phase in the extension field was the identification of insects and diseases attacking ornamental, vegetables, fruit and field crops. Some of the more frequent problems were (1) Bluemold and yellowpatch on tobacco in the seed bed, (2) Seed corn maggot and brown rot on tobacco in the field, (3) Root rot of soybeans, (4) Early blight and bacterial canker on tomatoes, (5) Cutworm and dampening off on spinach, (6) Mites and scales on fruit trees, and (7) Aphids on ornamentals.

A few cases of crop injury from the careless use of hebricides were visited during the season on tomatoes, potatoes and strawberries.

District 10 & 11 of the Horticultural Societies visited and toured the grounds in June and held their annual meeting in the School. Several Societies and local groups were addressed on various phases of fruit and vegetable production.

EXPERIMENTAL WORK

A great deal of time was spent on an extensive field testing program to answer the ever increasing growers' queries. Screening tests were conducted on newer herbicides and replicated tests were carried out where yield data and recommendations were being sought. A total of 43 herbicides were tested on 15 crops and 9 perennial weeds.

VEGETABLES — A test was carried out on the Erieau marsh, using Eptam and Endothol for weed control in red beets. Results were very good, however, at 8 lbs., Eptam was found to be injurious to the crop. In a trial on cabbage and cauliflower, Amiben granular was the most outstanding performer, with no crop injury. Karsil, as a post-emergence herbicide on carrots, gave excellent broadleaf weed control at low rates, but for grass control higher rates were needed. Esso Weedkiller

500 and liquid Cyanamid performed very well controlling weeds in onions. A replicated test was conducted on canning peas in which Tropotox and DNBP were applied at different rates and different stages of growth. No significant differences in yield were found, although the best annual weed control was given by 2 lbs. of DNBP at an early stage. Good perennial and annual weed control was given by Tropotox at 24 oz. acid when the peas were in the 5 leaf stage. In a screening test on peas, nine herbicides were tried and Amiben and granular DNBP were the best. In a replicated experiment with six herbicides at different rates on tomatoes FW743, Amiben and Neburon gave the best results. Solan showed much promise but was applied too late in the test. A replicated study was made on 2,4-D injury to tomatoes. 100, 300, 600 and 5000 PPM 2,4-D were applied at the following stages (a) after establishment (June 4), (b) at 13th leaf stage i.e. full bloom (June 20th), and when the first fruit was 2" in diameter (July 20th). The season was very dry and injury was not as serious as expected. The late June application gave the highest percentage of seedless fruit and this increased with the rate of 2,4-D. Pear shaped fruit and the seedless condition were not always associated together and whilst the seedless fruit occurred mainly in the early part of the season and decreased as the season advanced, the pear shaped fruit was more numerous in the September pickings. Late applications of 2,4-D increased the rate of black centres. Yields were reduced, fruit size was reduced, but the fruit number was greater a the low PPM rates.

FRUIT — Yield data and picking dates were recorded on the many varieties of apples, cherries and peaches with a view to commencing some variety testing work with the existing orchards.

LAWNS — Lawn plots were established to study management and herbicidal effects. Five materials were evaluated for crabgrass control on existing lawns. Zytron looked the most promising applied about mid-May, either as a granular or a liquid. For mouse-eared chickweed 245TP and CMPP were outstanding applied at 32 oz. acid. Injury occurred during hot weather using the 245TP.

Field Crops — Eight herbicides, applied in different forms and at different rates, were studied in a replicated test in field corn. Simazine, at 4 lbs., incorporated in the soil pre-plant or applied pre-emergence, and Atrazine pre- or post-emergence performed as well as the best cultivation practices. Eptam caused injury and granular 2,4-D gave poor weed control. Thirteen herbicides were screened for soybeans and Amiben and granular DNBP were promising. Two tests were conducted on sugar beets—one with granular formulations, and a second with liquids. More work is needed on the granulars. The liquid forms of Endothol, Dalapon, Eptam and Vegedex all gave very promising results. In a screening test on tobacco, Simazine and Eptam were the best herbicides tried, both for weed control and no crop injury. In a replicated test on white beans, DNBP, applied at early emergence, gave excellent results. No injury occurred probably because the weather was cool. Eptam also showed great promise for use in this crop. Residual effects of the triazines were investigated. Materials were applied with a logarithmic sprayer in 1958 and crops were planted in 1959. The early planted crops, like oats and sugar beets, suffered injury where Simazine was used. Effects of this herbicide appeared to weaken in late May—early June and crops planted at this time failed to show visual injury. Atrazine showed no residual even at 6 lbs. material.

HARD TO KILL PERENNIALS — Two series of tests were run on bindweed in which nine materials were tried. Good results were obtained by about three but true evaluation will not be possible until the 1960 season. A three series test was carried out with Fenuron pellets for brush control in cropland. Rates applied in 1958 were not high enough to give kill and only defoliated brush during the first year.

A three series test controlling couch grass in cropland ahead of corn, soybeans and white beans was carried out. Only Amino Triazole could be safely used for all three crops. Simazine, at 8 lbs., was safe for corn. In most years enough time is not available to use Dalapon as at least four weeks is required from the time of plow down to the time of planting. With horse nettle it was found that plowing down about 3-4 weeks after spraying with Amino Triazole gave the best results. Nutgrass, a weed assuming increasing importance, was tackled with Eptam and Hexachloroacetone on both sandy and muck soils. On the sandy soil Eptam at 6 lbs. and on the muck at 9-12 lbs. gave almost complete control, however, corn injury was excessive. Eight herbicides were used on leafy and cypress spruge and, based on the one year's results, Tryben and Fenac were excellent.

LIAISON WITH GROWERS — An ever increasing number of growers visited the trials and a number tried out on a small scale some of the latest developments and recommendations. Many of these fields were visited and it was found that the latest recommendations, especially the post-emergence use of DNBP on soybeans and the pre-emergence use of the same material on white beans, received wide acceptance. Tropotox was used widely on peas for Canada Thistle control and a number of growers tested Endothol on red beets. Sweet corn growers appear to be turning to Simazine and Atrazine.

ENGLISH

Both Senior and Junior Years received regular instruction in English, Public Speaking and Civics. Written English in themes, reports and précis has been stressed and every Senior student participated in an essay contest sponsored by the Ontario Credit Union League. Public Speaking is a major part of the course and a great deal of time was devoted to it. Each student took part in speeches, panel discussions and debates. In addition, several Senior students had an opportunity to be interviewed on district radio and TV stations.

Canadian and World Affairs make up the subject matter for the course in Civics. In this connection, the Senior Tour included a visit to the Parliament Buildings in Toronto and attendance at a sitting of the Legislative Assembly.

The English instructor is responsible for the writing and editing of the school calendar and the preparation of articles and advertisements for papers, yearbooks and periodicals. Similar assignments are the arranging of plans and programs for school events—such as Presentations, and Graduation.

Extra-curricular duties include supervising the Literary Society and the student executive for "Souvenir", the school's yearbook.

Throughout the year the work of the school library was carried on.

The instructor annually speaks at a great many meetings and banquets of district organizations which this year included Women's Institutes, I.O.D.E., Girl Guides, Young People's Conferences, Junior Farmer and 4-H Clubs. Invitations were also accepted to coach or judge at many debates, speaking contests and other competitions.

During the summer months time was devoted to assisting in extension and public relations, including talks with prospective students and their families.

AGRICULTURAL ENGINEERING

Specialists of the Agricultural Engineering Service of the Extension Branch are responsible for all the work in this division. Their obligations are three-fold.

1. Responsible for the Engineering Extension Service in the Counties of Essex, Kent and Lambton.

- 2. Instruction in Agricultural Engineering and Mathematics to the students in the school.
- 3. An applied research program with the Experimental Farm being used as a testing ground. e.g.

(a) Farm Buildings —

(i) A new design in farrowing houses.

(ii) A new design in a beef bull testing barn.

(b) Crops —

An irrigation experiment with burley tobacco using varying amounts of fertilizer against irrigated and non-irrigated plots.

(c) Farm Machinery -

Advice and assistance given regarding the purchase of machinery, e.g. wagons, harrow-weeder, field cultivator, plow, feed mixing equipment, etc., to be used at the Experimental Farm.

Such an arrangement is rather unique and is working to the mutual satisfaction of everyone concerned and with an efficient use of man power.

REGIONAL VETERINARY DIAGNOSTIC LABORATORY

The laboratory established at the Western Ontario Agricultural School in August 1952, by the Ontario Veterinary College, is able to give a complete diagnostic and consultation service to the Veterinarians and farmers of Southwestern Ontario. Lectures are given to both Junior and Senior classes attending the Western Ontario Agricultural School.

Every year these courses of lectures are changed, if necessary, to ensure that the latest developments in their respective fields are included in the material given.

Research Projects

1. Mastitis:

- (a) In the fiscal year of 1958-1959, investigation into use of Autogenous Staphylococcus (Mastitis) Bacterins was started. We are now in the process of accumulating data of the results.
- (b) The typing of various strains of Staphylococci found in dairy herds, in collaboration with the Department of Bacteriology, Ontario Veterinary College.

2. Swine:

Some investigation into the raising of disease free pigs, in collaboration with the Swine Department, Western Ontario Agricultural School.

3. POULTRY:

Some investigation into the incidence of Leukosis in various breeds of laying birds, in collaboration with the Poultry Department, Western Ontario Agricultural School.

4. CATTLE:

Some investigation into the adavantages of the implantation of hormones in feeder cattle, in collaboration with the Cattle Department, Western Ontario Agricultural School.

Services: Extension Activities

This laboratory is concerned with the diagnosis of disease conditions in animals submitted by the Veterinarians, the farmers, and others. Post mortem specimens are

also submitted to the laboratory for bacterial examination. The Regional Veterinary Officers made numerous trips to the farms in the area for consultations service.

One thousand eight hundred and seventy-six (1,876) animals and poultry were submitted to the laboratory for post mortem examination.

Mastitis Diagnostic Service

The total number of milk samples tested at this laboratory in the fiscal year numbered 50,790. This is an increase of 16,153 samples over last year. Of this number 32,470 samples were submitted by practising veterinarians; the Kent County Health Unit; and Commercial Dairies; 3,061 samples were submitted by the farmers; and the remaining 15,259 samples were collected by the personnel of the laboratory.

Demonstration Farm - New Liskeard

The New Liskeard Demonstration Farm is located in what is known as the Little Clay Belt of Northern Ontario. It is situated north of the town of New Liskeard within the town limits.

The Farm being located on the southern fringe of the Temiskaming Clay Belt gives all visitors to the area an indication of the potentials and possibilities of Agriculture in this particular section of Northern Ontario. The soil is representative of the soil not only in the Little Clay Belt itself but also soils in other sections of Northern Ontario.

The Farm consists of 320 acres of heavy clay soil of which 304 are tillable. Of the remainder some five acres are used for farm buildings and lawns while approximately 11 acres is rough untillable pasture land.

The Demonstration Farm strives to give leadership in all phases of Agriculture, carried on in Northeastern Ontario, with greatest emphasis being placed on Animal and Field Husbandry projects. All projects are kept on the most practical basis.

During 1959 the services available at this unit were made much greater use of, with a significant increase in the number of farm people from Northeastern Ontario visiting the unit, to discuss the various projects in the 1959 program.

The past year saw a notable increase in visits from farmers from other sections of the Province, all of whom, were most impressed with the Agricultural possibilities of the area. In addition, a considerable number of American tourists visited the farm particularly during July and August.

Lack of rainfall during the months of July and August decreased the productivity of pastures and consequently the aftermath of the hay fields.

Seeding was followed by showers which kept moisture adequate until early July. This was followed by extremely warm temperatures with only moderate moisture until maturity. This resulted in lower than average yields for this area.

The Fall season was short with heavy rainfall which was followed by snow early in October. However, due to the early completion of harvesting operations all fall plowing was completed by early October.

The Farm building program as undertaken this past year has made a great improvement to the general appearance of the Farm. The clear span beef barn, hen house, sheep barn and vertical silo are of the greatest interest to the farmers in the area and as such, many visits have been made during the winter months by interested farmers who are contemplating additional farm buildings on their own farms.

Junior Extension

Facilities at the unit permit close co-operation with the local Agricultural Representatives in providing judging classes for the various 4-H and Junior Farmer clubs.

Several local 4-H Judging Competitions, Club Meetings and Coaching classes were held during the year for the local 4-H Club members.

Two groups of students from the Ville Marie Agricultural School visited the farm and were given a conducted tour of the unit. In addition, seven different groups of Public School students from the rural and urban areas, visited the farm.

In October, the Northeastern Ontario 4-H Competitions were conducted at the farm.

The Temiskaming Junior Farmers visited the farm twice during the year. They were taken on a conducted tour of the farm and the various experimental plots.

On the second occasion, an evening coaching meeting was held on the various livestock and seed judging classes, which are included in their District Judging Competition.

Senior Extension

Several Senior Agricultural organizations visited the farm to see and discuss the livestock program maintained, while others visited the various experimental plots of cereal grains, forage and pea plots.

The utilization of the hay conditioner in hay making operations continues to be of great interest to farmers in the area. Small groups and individuals have visited the farm throughout the year to see for themselves the operation of the machine and the quality of the hay stored.

During the past year assistance was given various beef producers in the areas of New Liskeard, Matheson, Cochrane and Kapuskasing. Assistance has been given in the form of addresses at their meetings, organization of a beef cattle feeder sale, the purchase of three carloads of breeding stock for three new producers, and in the selection of nine beef herd sires.

In addition, a considerable number of visits were made to the farms of the beef producers regarding the many aspects of beef cattle management.

Liaison with the local newspapers has shown considerable progress this past year and excellent publicity has been given the various farm projects by these publications. Some nine different articles for the local newspapers, covering results obtained and projects undertaken, were prepared and published.

International Botanical Congress

In July a group of 45 botanists of the International Botanical Congress visited the farm. Their visit included a general farm tour. Of particular interest to this group were the Field Husbandry projects, and hay making machinery.

Farm Buildings

The farm building program undertaken in 1959 which included a hen-house, sheep barn, vertical slab silo and open span beef loafing barn, has improved the unit greatly. This program has been of great interest and pride to farmers in all sections of Northeastern Ontario. These buildings were designed as practical structures for farmers in the area, and are meeting with great approval by those who have seen the buildings being utilized during the winter months.

Numerous inquiries have been received regarding the use of a vertical silo in Northern Ontario with many keenly interested and waiting to see this structure in operation during the winter of 1960-61.

Field Husbandry

Experimental data on cereal grain and soup pea varieties are obtained through demonstration plots on the Farm, in co-operation with the Field Husbandry and

Soils Departments of the Ontario Agricultural College and the Canada Department of Agriculture, Field Husbandry Department, Ottawa.

On the sixteen fields on the farm, a four to five year rotation is practiced depending on the particular field and its capabilities. That is, one to two years of grain—two years hay, and one to two years of pasture with the exception of the three fields which are seeded to permanent pasture for the sheep flock and beef cattle. It is the intention to seed down additional acreage in the future, to permanent pasture to provide sufficient pasture acres as the numbers of our beef herd increases. Under our present rotation all fields are seeded down to the recommended hay-pasture mixtures for this area, namely:

 Alfalfa —
 6 lbs.;

 LaSalle Red Clover —
 2 lbs.;

 Climax Timothy —
 4 lbs.;

 Lincoln Brome —
 6 lbs.;

 Ladino Clover —
 1 lb.

Fertilizer requirements are applied in accordance with soil test results each year.

Hay fields receive a 150 lb. application of 10-10-10 fertilizer or a 100 lb. application of nitrogen, depending on the composition of the hay stand the previous year.

Grain fields receive either an application of 100 lbs. of 11-48-0 or a 150-200 lbs. of 4-24-12 depending on field requirements.

Barn yard manure is applied where possible prior to spring seeding.

The two cereal grain varieties grown at the unit are the varieties Shield and Garry which appear the most adaptable to the area. The variety Garry being the most popular from the standpoint of yield and quality. Average farm yield of this variety for 1959 being 63 bushels per acre.

The Shield variety being an early maturing variety is sown throughout the area on a limited acreage, farmer acceptance of this variety being slow to develop. Average yield of this variety on a 16 acre field, averaged 48 bus. per acre. Yields of cereal grains being considerably lower than in 1958, which was attributed to the dry hot weather during the months of July and August.

One 14 acre field of York barley was grown this year and seeded down. Average yield 45 bushels per acre. The field was sown on May 12th and straight combined August 14th. Half of this field was seeded at 14 inch intervals while the remaining half was seeded in regular 7" spacings. Visual appraisal of this field did not indicate any appreciable difference in vigor or stand of the new seedlings.

Cultivation of the land commenced on May 4th, 1959, the first seeding was on May 12th and the seeding operations completed on May 27th. The length of seeding period was the result of unlimited heavy rains and cold weather.

Birdsfoot Trefoil

One two acre block of Empire Birdsfoot Trefoil was seeded in the Spring of 1959. The trefoil was innoculated and seeded at the rate of 7 lbs. per acre plus 6 lbs. of climax timothy.

Fertilizer was applied at the rate of 150 lbs. per acre of 11-48-0. The stand of birdsfoot trefoil looked particularly promising after harvesting with approximately 65% of the stand approximately six inches in height.

Alfalfa Variety Test

Eight one acre plots of alfalfa were sown in the spring of 1958 to determine which of the following eight varieties, Dupuits, Canadian, Grimm, Ranger,

Rhizoma, Narragansett, Vernal, Viking, might prove the most satisfactory for Northern Ontario soils.

The following information was obtained. These results are based on the first harvest year only.

Dupuits and Alfa give similiar early growth which is greater than all other varieties in the test. Alfa had a tendency to greater growth than Dupuits.

Vernal showed the best of the standard types of alfalfa in the test-having the most plants and grew in the low spots better than the other varieties.

Narragansett appears as good as Vernal except for a poorer stand in low spots.

Ranger survived in low spots better than Rhizoma or Narragansett but had less growth than Narragansett and about equal growth to Rhizoma.

Grimm was among the poorest stands.

In general Alfa and Dupuits are most vigorous and provide more growth than other varieties. Ranger and Rhizoma are inferior to Vernal in vigor and growth. Narragansett is similar to Vernal but appears subject to winter killing.

Zero Grazina

Zero grazing was used for a period of some three weeks last autumn, rather than let the beef herd trample the after grass on first year meadows. This proved benefical during the last three weeks of September when heavy rains were experienced. It also supplemented our old pastures considerably where the beef herd were held.

Pasture Management

Pasture conditions throughout the grazing period were quite variable due to lack of rainfall during the months of July and August. There was sufficient pasture for the beef herd and sheep flock.

Pasture fields receive a 150 lb. application of 0-20-20 in the Fall of the year, followed by a 100 lb. application of ammonium nitrate in the spring. Pastures are chain harrowed each spring for the distribution of droppings, and clipped periodically throughout the growing season, depending on growth conditions.

The following permanent pasture mixture was seeded:

Alfalfa —	5 lbs.	Red Clover —	2 lbs.
Brome	7 lbs.	Orchard —	3 lbs.
Timothy —	3 lbs.	Meadow Fescue -	2 lbs.

Fertilizer Tests

Fertilizer tests were again conducted this past year.

Test #1—was conducted to determine the value of Urea 45% nitrogen as compared to ammonium nitrate 33% with both types being compared as to a ten acre block which received no application of nitrogen.

One 20 acre hay field received a 70 lb. application of Urea while the adjacent similar size block received 100 lbs. of Ammonium Nitrate—the third adjacent 10 acre block received no fertilizer applications.

Results of Urea treated plot gave an increase of 1-1/3 tons of hay as compared to non-treated area—while the Ammonium Nitrate 33% plot yielded a one ton increase as compared to non-treated ten acre block.

The value of nitrogen application as compared to similiar application of balanced fertilizer (10-10-10) was tested on practically a non-legume hay stand. The use of Ammonium Nitrate proving the most practical from the standpoint of hay yield and pasture aftermath.

This type of fertilizer testing was well received by the many farmers visiting the farm as most farmers indicated the previous year, their desire to see for themselves, the value of using nitrogen applications on hay and pasture fields in this area.

Hay Making

The 1959 hay season due to the limited rainfall during July was ideal.

First cutting of red clover was commenced on June 26th with the having operation completed on July 23rd with 16,300 bales put in the barns.

The average hay crop was lower in 1959 which was attributed to the limited rainfall. Yields varied from a high of $2\frac{1}{2}$ tons on one second year meadow to a low of $1\frac{1}{4}$ tons on two of the older meadows.

The use of ammonium nitrate in the form of Urea 45% and Aeroprills 33% on two hay fields gave excellent returns.

Hay Conditioner

In co-operation with other Provincial Farms namely Kemptville, Guelph and Ridgetown, considerable data was collected on the operation of this machine.

From the data recorded it was definitely established that this machine decreases the curing time by a twenty-four hour period, providing the hay was conditioned immediately after cutting.

Several lots of bales from alternate swaths were stored separately for demonstrative purposes at farm meetings and seed fairs.

The purchase of a centre mounted tractor mower enabling us to attach the conditioner directly behind the tractor, made for a most workable, compact unit, and no difficulty was experienced by the operator on corners etc. during the cutting operations.

Two lots of hay—both conditioned and unconditioned were stored separately in the barn for a feeding trial experiment during the winter of 1960.

Tile Drainage

This past year a 45 acre field on the North-east corner of the farm was tile drained. This particular field has always been a particular problem due to poor drainage and is representative of considerable acreage in the area. This project was undertaken in the latter part of September 1959 to determine the value of tile drainage for similar land in North-Eastern Ontario.

A Farm Drainage Demonstration was held at the farm, at the time of this installation, which was well attended by local farmers who are particularly interested in this project.

ANIMAL HUSBANDRY

Live Stock

Registered live stock on the farm consists of Hereford cattle, Yorkshire hogs, North Country Cheviot and Suffolk ewes.

In addtion there are a number of grade Hereford cattle and cross-bred Suffolk-North Country Cheviot ewes.

Breeding stock of Yorkshire pigs and ram lambs are sold to farmers in the different areas of Northern Ontario when stock is available.

No beef cattle breeding stock has been sold due to the building up of the farm herd.

The present herd is maintained and being built up to focus attention on beef raising in Northern Ontario and where practical to provide an additional enterprise for farmers in the area.

Herefords

Our present registered herd consists of 2 bulls — 21 cows — 8 heifers — 13 calves. The grade herd consists of — 27 cows — 11 heifers — 29 calves — 18 steers.

Both herd sires are on loan from the Ontario Agricultural College and are performance tested bulls. All available data is being recorded on their progeny—to obtain more information on the value of performance testing in beef sires. Weights being recorded are birth weight, weaning weight, year old and two year old weights on all female progeny. This information combined with the individual animals type will serve as the basis for herd replacements and for any sales of breeding females which may be sold to Northern Ontario farmers.

The main purpose of maintaining this herd is to focus attention on beef raising, particularly as it applies to management and breeding.

The new 100×40 clear span beef barn built in the Fall of 1959 is of particular interest and value to our northern farmers. This building we believe to have several advantages over the the conventional pole barn, in that ease of cleaning, bedding, and the many uses which can be made of this building throughout the year, makes it more practical and useful as a farm building.

Some seventy head have been kept in this barn this past winter with feeding racks located in the yard. The cattle kept outside were fed hay only and given a choice of mineral and water. All animals have come through the winter in a most thrifty condition. No medication was administered throughout the winter other than for the control of lice.

Beef Co-operative farms, under the direction of the Extension Branch have had one of our Beef sires on loan this past year. An additional young herd sire was raised and performance tested at the unit this past year and will be loaned to the Beef Co-operative Farm in the Temiskaming District this spring. This bull made an average daily gain of 2.89 lbs. and a lifetime gain of 2.32 lbs. per day during the 168 feeding period.

Four baby beef steers were fed at the unit last year, this group also made up a beef exhibit for the Temiskaming Fall Fair. This exhibit was placed at this Fair as a result of requests from the Beef Committee from this organization. The four steers were killed and sold locally to the Temiskaming Co-operative were of high quality. Sales of such animals were made locally, so that farmers could have the opportunity of seeing the individual carcasses of these animals.

Swine

Seven sows and two boars are the nucleus of the present swine herd. Three of these sows are of English-Yorkshire breeding while the remaining four are of Canadian Yorkshire breeding. One boar was purchased from an Ontario breeder in June of 1959 while the second boar also of Canadian Yorkshire breeding was raised at the unit. This boar is being used to cross-breed on the English Yorkshire sows.

The cross-bred English and Canadian Yorkshire pigs we believe are a considerable improvement over the straight English hogs—being smoother on the shoulder and better on their legs. In addition, the percent of Grade "A" carcasses has increased considerably. Breeding stock is sold to farmers throughout North-Eastern Ontario. Market hogs are sold through the local Temiskaming Sales Arena and the Toronto stockyards.

Sheep

The sheep flock consists of 39 registered North Country Cheviot ewes, twenty-four of which are the property of the Canadian Department of Agriculture Production Service. This flock is established on the basis of a five year co-operative program. This flock is being progeny tested.

Fifteen registered Suffolk ewes are maintained to further our studies on a cross-breeding program. The cross-breeding experiment was started at the request of local sheep producers who are interested in production of better quality market

lambs.

The sheep flock is dipped annually and treated for internal parasites twice yearly. No difficulty has been experienced this past year in so far as intestinal parasites are concerned. Two losses were diagnosed as pulpy kidney, a disease with which several of our local breeders have experienced considerable difficulty.

Feeder Lamb Experiment

The feeder lamb experiment conducted in 1958 was not carried on in 1959 due to the lateness of the building renovation program. As a result of inquiries received from Ontario farmers and other sections of Canada, it is proposed to carry on this program commencing in the Fall of 1960. Local sheep producers in the area have also requested that, a larger number of lambs be used in 1960.

Poultry

The poultry flock consists of 600 Leghorn hens.

All eggs are sold locally through the Temiskaming Co-operative.

Leucosis has been the main cause of laying pens deaths—a disease which is

becoming more of a problem each year.

The six hundred pullets were obtained from the Kemptville Agricultural School on June 1st and range grown on a restricted feeding program until placed in laying pens in November.

TREE FRUIT DEMONSTRATION 1959-1960

Most of the fruit trees after making excellent growth in the season of 1958 emerged from the winter of 1958-1959 showing very severe winter injury on the trunks and branches above the snow level. Of interest is the fact that Dolgo crab, a very hardy variety, resisted the cold temperatures and survived with no injury. The apple trees which had been double-worked using Robusta V and Malling VII showed a small amount of injury. When the extent of the injury was apparent, all injured parts were removed and the wounds covered with a tree dressing.

The soil in which the trees were planted is a very heavy clay loam with the surface soil showing high organic matter content. This in part is responsible for the severe winter injury in that the trees were not able to properly mature before winter.

The trees made excellent growth during the 1959 season with some fruit being produced on the Dolgo crab variety. Prior to winter the trees were protected with wire mouse guards. As protection against rabbits, a liquid acrylic resin mixed with "Arasan 75" was applied to the trees. This material having a white colour was

selected not only for its repellentcy value but also to possibly reflect the heat rays during cold clear winter days. As liquid acrylic resin has some plastic properties, it could conceivably reduce dessication by dry winds.

In an endeavour to trap snow in the plantation and reduce frost injury, snow fences were erected in the Fall of 1959 through the plantation. The Spring of 1960 will indicate the advantages of deep snow cover to protect the fruit trees.

Strathclair Farm - Sault Ste. Marie

The Demonstration Farm known as Strathclair Farm is situated at the north easterly fringe of the city of Sault Ste. Marie. This farm is approximately 300 acres and at the present time is operated by the Department of Agriculture in the interest of education and research. General farming operations are being carried on along with some tests on cereals, grasses and legumes. Various tests and the recording of data on a beef herd of Herefords are being conducted.

The topography is mainly flat except for approximately 40 acres of hilly pasture land. This flat land presents a drainage problem at certain times of the year, but with the use of open ditches, most of the surface water is removed. The soil is of a sandy loam nature with approximately 13 acres of clay loam around the buildings.

A number of farmers visited the farm during the past year to view the methods used in the handling and harvesting of crops. There were many inquiries as to the purchase of bulls and heifers as breeding stock.

Extension

The Algoma Junior Farmers held their Annual Judging Competition at the Farm in July, where seventy 4-H Club Members and Junior Farmers competed. Classes of beef cattle were chosen from the beef herd on the farm, and afforded some excellent instruction to the 4-H Beef Clubs.

Parents accompanying the 4-H Club Members were able to view the silage operations being carried on at that time. Many visited the rod row plots of cereals, grasses, and legumes. There were also many inquiries concerning the open ditches on the farm as to their construction and how well they operated.

Seeding

Seeding operations started the 18th day of May on two fields comprising approximately 44 acres. Five acres of York Barley were sown along with Climax and Empire Birdsfoot Trefoil. The remaining acreage was seeded to Garry Oats, with a grass legume mixture of Alsike, Red Clover, and Timothy. Chemical fertilizer used was 4-24-12 at the rate of 200 pounds per acre. Very little damage was experienced by aphids as was the case in other parts of the District.

Silage

There are two silos at Strathclair Farm, one is a horizontal silo and the other an upright. Both were filled with a mixture of Reed Canary Grass and Red Clover from a 40 acre field. The best use of Reed Canary Grass has been realized by making it into silage. This past winter the horizontal silo was not self-fed as in past years, instead bunkers were filled daily. This eliminated considerable waste and amounts fed could be governed. Very little freezing was experienced and the silage was of excellent quality. This 40 acre field has supplied silage to 125 head from November 1st, 1959, and there will be sufficient feed until the cattle are pastured.

Haying

The hay crop was satisfactory with some very excellent quality hay being stored. The yield averaged one and one half tons per acre. All hay was field baled and stored in the barns immediately after baling. The hay was of a Timothy, Red Clover, and Alsike mixture. At certain times during the haying operations, difficulty was experienced in drying and curing the hay. There will be a carry over from the feeding season of approximately 70 tons.

Harvesting

The York Barley was cut in mid August followed by Garry Oats. The crop appeared to be about average, but extreme difficulty was experienced when threshing commenced. The Fall weather was very wet, this caused much discolouration in the Grain, and sprouting occurred in the stooks causing considerable loss in the yield. Enough grain was harvested to feed forty calves during the winter. This grain when mixed with a 32% concentrate was a palatable feed for the calves, and satisfactory gains were obtained.

Pasture Management

All pasture fields were given a light application of 30% Ammonium Nitrate and 4-24-12 fertilizer in April. This has helped to obtain extra growth during the Spring and acted as an insurance against close cropping by the cattle. During the latter part of May and early June, the pasture fields were sprayed with 2,4-D and M.C.P. 80, which proved very effective in the eradication of weed growth.

Some pasture fields were clipped during July and hay was made from the clippings realizing approximately 600 bales. These clippings when fed to the cattle during the winter did not prove to be very palatable.

Rotational grazing is maintained on all pasture fields which are not allowed to become overgrazed. Last year the pastures maintained a cow and calf for every 13/4 acres.

Ditches

Drainage has always presented a problem, but with the use of open ditches most of the surface water is eliminated. All ditches were sprayed with Dowpon, which was very successful in the elimination of cattails. The soil is of a sandy loam and unless the ditches are grassed, considerable erosion occurs from "run-off".

Stables

All stables were sprayed with a disinfecting whitewash. This proved very effective in preventing the formation of cobwebs as well as presenting a cleaner and brighter stable.

Livestock

At the present time the herd of purebred Herefords has increased to 125 head.

The cows are pasture bred and the calves run with their dams during the pasture season. Birth weights are recorded on the calves as well as weights when they are put on pasture. In September the bull calves are castrated and heifer calves vaccinated. The steer calves are sent to the Ontario Agricultural College, Guelph, as yearlings where feeding trials are conducted.

A warble fly insecticide, was administered by a Veterinarian to 15 calves and and equal number used as a control. At monthly intervals these calves were weighed

and fecal samples taken which were sent to the Ontario Veterinary College to determine what effect Rulene had on reducing the incidence of worm eggs in the feces. From reports obtained it would seem that the results were not significant. However, there was a marked difference in the appearance of grubs between the treated and non-treated animals.

Dehorning of calves was accomplished with the use of an electric dehorner which was very satisfactory. The horn clippers were used on yearlings and two year olds.

Half the cow herd was stabled and tied in the conventional type stanchion, the other half were allowed shelter in an open barn and fed outside. Hay and silage were placed in feed bunks daily. A comparison of the two methods of housing showed less labour and time involved with the loose housed cattle, than those in the conventional type stanchion.



BRANCHES OF THE ONTARIO DEPARTMENT OF AGRICULTURE



Agricultural and Horticultural Societies Branch

AGRICULTURAL SOCIETIES

Despite extremes in weather conditions during the fair season reports would indicate that on the whole 1959 was about average insofar as entries and attendance at fairs were concerned. In many instances some increases in both categories were noted although gate receipts of the three largest shows—Canadian National Exhibition, Central Canada Exhibition and Western Fair—were down a little from 1958.

Of the 253 societies on record 245 sponsored fairs in 1959. There are 8 "A" fairs, 39 "B" fairs and 198 "C" fairs.

Centennial Fairs

Eight societies celebrated their 100th anniversary. These were: Thedford, Mount Forest, Elmvale, Cobden, Tara, Comber, Sunderland, Gorrie (Howick). In each instance a new gateway or entrance was built and suitably inscribed plaques were placed on the main pillars. A special centennial grant of \$1,000.00 was paid each society to help defray cost of building the new gateway. Engelhart celebrated its 50th anniversary by special program.

Women's Work

Displays by Women's Institutes and church groups were particularly good, both from the standpoint of quality and quantity. Over half of the fairs had a place in their program for this feature. Those with highest entries (15 or more) were: Simcoe, Chesley, Campbellford, Orangeville, Stratford and Caledonia. Ottawa had 28.

Women continue to be active in many ways including the office of secretary. About one quarter of the societies have a woman as their secretary and they are doing a splendid job.

4-H, Agricultural and Home Making Clubs

The 4-H Club program in Ontario has been well supported by the fair boards. There were 680 4-H Agricultural Clubs with a membership of 11,502 and 1,371 4-H Home Making Clubs with a membership of 12,517 organized and directed by the staff of the Extension Branch.

The Home Making Clubs were sponsored by Women's Institutes and in many instances the club membership had a project at the local fair.

Societies co-operated well with the Agricultural Representatives and Home Economists and club leaders and assumed the sponsorship of 421 of the 680 Agricultural Clubs. Approximately 63% were given financial help and considerable encouragement by Agricultural Societies. Of the 421 clubs sponsored 235 were calf clubs.

Breed Shows

Some 116 County or Regional Shows and 11 Championship Shows were held at Fairs through the co-operation of Agricultural Societies.

Commercial Feature Exhibits

Many fair boards did not take advantage of the commercial feature grants provided under the Agricultural Societies Act whereby 50% of the cost is available on approved projects. A total of 108 societies sponsored 154 displays. The products included tobacco, grain, hay, fruit, honey, vegetables, cheese, maple syrup, wool, market lambs, bacon hogs, feeder cattle, baby beef, potatoes, eggs and poultry.

IMPROVEMENTS TO GROUNDS AND BUILDINGS

Considerable progress was made by a great many fairs in the improvement to property. Many new buildings were added.

Milton put up a new modern grandstand of steel and concrete block at cost of \$55,000.00. New grandstands were also built at Newington and Chesterville. Cobden added a concrete block building designed for booth and ticket office at entrance to grounds.

Ridgetown erected a barn for 4-H Club livestock and at the time of the official opening held as a special feature of the fair, it was filled to capacity. Livestock barns were also built at Forest, Emo, Dundalk, Belleville, Beamsville, Mitchell, Peterborough, Norwich, Riceville, Ancaster, Charlton, Meaford, Renfrew, Paris and Leamington.

Brigden erected a new administration and junior activities building. Florence completed the Community and Agricultural Centre. Petrolia and Bracebridge had new exhibition buildings.

Metcalfe painted all their buildings white and the roofs aluminum. Leamington also had their livestock barns and grandstand painted. Roseneath had the roofs of their buildings painted aluminum. Picton also painted the exterior of their main buildings.

Peterborough erected a new administration building and Erin a concrete block building for toilet facilities.

Brampton had the use of the new Curling Rink built on the fairgrounds by the Curling Club for their cattle exhibits.

Field Crop Competitions

Type	Number of Competitions	Number of Competitors
Oats	131	1,703
Barley	17	185
Potatoes	11	113
Wheat	7	97
Corn	79	1,286
Beans	1	22
Inter-Tilled	1	9
Farmstead Improvement	1	16
Hay	11	199
Turnips	1	11
Pasture (new projects)	9	103
Sugar Beets	2	28
Tobacco	1	23
	272	3,795

GOVERNMENT GRANTS ON PRIZE MONEY

An amendment to the Agricultural Societies Act increasing the maximum grant on prize money from \$1,000.00 to \$1,500.00 meant that 71 fairs, 22 of which are "C" fairs, were able to earn higher grants. Forty-six received the new maximum

of \$1,500.00. Six of these, namely Beeton, Bracebridge, Emo, New Liskeard, Sutton and Tillsonburg are "C" fairs.

The percentage used in apportioning these grants was 31.6. Apart from the C.N.E., the C.C.E. and Western Fair, which draw grants (\$2,500.00 each) under another section of the Act, the expenditure for prizes in Agricultural classes was \$649,578.00. This was an all time record. The amount spent on purses by 110 fairs conducting harness racing was \$53,500.00.

Summary of Prize Money Awarded at Fairs

Canadian National Exhibition	\$169,962.00
Central Canada Exhibition	46,217.00
Western Fair (London)	41,181.00
All Other Fairs	649,578.00
Grand Total	\$906,938.00

Amount of grants by groups:

Societies	receiving	under \$400.00	60			
Societies	receiving	\$ 401.00 to \$ 600.00	51			
Societies	receiving	\$ 601.00 to \$ 800.00	36			
Societies	receiving	\$ 801.00 to \$1,000.00	24			
Societies	receiving	\$1,001.00 to \$1,499.00	25			
Societies	receiving	Maximum \$1,500.00	46			
Societies	receiving	\$2,500.00	3	(separate	provision in	the Act)

CAPITAL EXPENDITURE GRANTS

Most societies take advantage of the 25% capital expenditure grants.

The regulations permit payment as follows:

	A Fair	B Fair	C Fair
Maximum on Annual Improvements	1,500.00	900.00	600.00
Maximum on Major Building Projects	100,000.00	50,000.00	25,000.00

Summary of Other Grants

Northern Ontario Special	48
Field Crop Competitions	272
Commercial Features	154
Wet Weather	22
Centennary	8

A meeting was held in each of the 16 districts in the province. District 10 held two meetings, spring and fall. The latter is considered the annual meeting. Some districts hold a special meeting with one or two representatives from each society to choose fair dates.

Attendance at all district meetings was very satisfactory. Two districts, 10 and 5, have Challenge Trophies for attendance. District 5 also introduced a prize system for best reports given by delegates.

Board Meetings

Four board meetings were held during the year, two of these during the convention in February. The A & B Fairs Section, also the Women's Section, held their meeting at convention time. Both sections are represented on the Board.

Convention

The annual meeting and convention was held in the King Edward-Sheraton Hotel, Toronto, with 385 women and 482 men delegates registering. Many interesting topics were discussed by outstanding speakers. In addition forums for secretaries, treasurers and managers, also discussion groups on fair problems, were featured.

Displays of prize lists, pictures, posters etc., also handicrafts, were arranged. The latter was handled entirely by the Women's Section.

Essay Contest

The Ethel Brant Monture Essay Competition for school pupils up to Grade 8 on the subject "Why I Am Proud To Be A Canadian" was sponsored by the Women's Section.

The winner was Mary Lou Hastings of Highgate. Other winners were: Celia Roy, Ophir (Bruce Station Society); Judy Wright, Blackriver (Matheson Society); Connie Farrant, Dunchurch (Dunchurch Society); Mary Lou Stock, Spencerville (Spencerville Society) and Charlotte Zuppinger, Mitchell (Mitchell Society).

Coloured Photographic Competition

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CHAMPIONSHIP — Paris

Reserve — Ridgetown | Tie 16 Societies entering 99 slides

Class 2 — C Fairs

CHAMPIONSHIP — Tillsonburg

Reserve — Milverton 21 Societies entering 129 slides.

C.N.E. JUNIOR CHAMPIONSHIP — Champion in Section 4, Classes 1 and 2 — PARIS
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Prize List Competition

This was designed to encourage fair boards to do a better job in producing an attractive, well planned prize list. Cash prizes were offered in three divisions in accordance with classification of societies. Over 100 prize lists were entered for competition. Winners were:

	A Fairs	B Fairs	C Fairs
1st	Lindsay	Seaforth	Thedford
2nd	Norfolk	Caledonia	Acton
3rd	Galt	Canadian Lakehead	Harrow
4th	Welland	Barrie	Tara

CANADIAN FAIRS ASSOCIATION

This group holds its annual three day meeting in Toronto in November. Ontario has contributed considerable leadership to the Association in that Evan McGugan, Manager of the Western Fair was president in 1958; Hiram McCallum, Manager of the Canadian National Exhibition was president in 1959; and the 1960 President is Jack Clarke, Manager, Central Canada Exhibition, Ottawa. Mr. Clarke is also Manager of the Ottawa Winter Fair.

International Association

Ontario's larger fairs participated in convention of the International Association of Fairs and Exhibitions which meets annually in Chicago in early December. In the printed convention program section of a competition held in conjuction with the convention and open to state associations, the Ontario Association of Agri-

cultural Societies won fourth prize. In a similar competition a year ago our program was awarded first prize.

Showmen's League

The Association salutes the Ontario Chapter of the Showmen's League of America which held its inaugural banquet in the Royal York Hotel on November 25th. The organization was launched in October with Mr. J. W. "Patty" Conklin as its first president.

Service Diplomas

A total of 116 service diplomas were awarded by the Association to individuals in recognition of their work in the betterment of Agriculture.

PLOWING MATCHES

Plowing matches have attracted the attention of farmers and others concerned with the Agricultural development of our country for more than a century and despite the great changes that have taken place in farming operations, particularly during the past decade, competitions in plowing are still being sponsored and encouraged. This is also true of other parts of Canada and in many countries of the world as indicated by the keen competition each year in the World Plowing Match.

A new branch was established during the year on Wolfe Island, Frontenac County. Some of the older matches have no record of the year of organization but reports show the Six Nations match dates back to 1862, Welland 1870 and Caistor 1887.

Summary of Matches and Entries

		Events				Entries	
	1957	1958	1959		1957	1958	1959
Senior	67	67	66	Tractors	1,578	1,566	1,587
Junior	12	14	12	Horses	298	275	247
Coaching Days	25	22	25				
Home Plowing	5	7	5		1,876	1,841	1,834
District Matches	2	2	2				

Entries were slightly less in branch matches than a year ago but were higher than in 1956. Horse plowing classes are still being featured.

High Entries		Prize Money	Prize Money		
Haldimand	58	King and Vaughan	\$854.00	North Dumfries	329
Peel	56	Haldimand	778.00	King and Vaughan	203
North York	54	Peel	734.00	Blenheim	200
East York	50	North York	720.00	Oneida	186

Prizes

Approximately \$22,900.00 was paid out in prizes at local matches.

Judges

The usual number of judges and coaches were supplied by the Department of Agriculture at no cost to the branches. In a number of instances where entries were heavy extra judges were supplied. The Department of Agriculture also furnished the judges for the International.

INTERNATIONAL PLOWING MATCH

Wentworth County was the host to the 1959 International Plowing Match and Farm Machinery Demonstration. The same event was there in 1920. The site, near Dundas in the Township of Beverly, was ideal. The local committee did a fine job in carrying out their responsibilities. In this they had the backing of the Wentworth County Council, the City of Hamilton, the Town of Dundas and the Beverly Township Council as well as numerous organizations both urban and rural.

A grant of \$8,000.00 from the County was made available to the Committee to help defray expenses. The City of Hamilton showed its keen interest and support by providing a complimentary banquet for 1,000 guests on the last evening of the match.

Sub-committees, of which there were 17, carried out their responsibilities with one objective in mind—putting on the best International Match possible.

While the attendance was somewhat affected by unfavourable weather conditions throughout Ontario during the week of the match and immediately preceding the opening, it was estimated that close to 70,000 saw the event.

Finances

The Local Committee received the revenue from the sale of admission tickets and parking at the rate of 50 cents per person and 50 cents per car. This income was used to finance expenses for material, labour and services in connection with the committee's responsibilities.

Entries

		7.7	Plowing	PT - 1	Welding
		Horse	Tractor	Total	
October	13	12	55	67	4
October	14	20	127	147	19
October	15	20	146	166	29
October	16	20	132	152	17
			-		
Totals	1959	72	460	532	69
	1958	53	424	477	79
	1957	55	482	598	96
	1956	111	487	611	66
	1955	47	564	611	86
	1954	130	739	869	81

While the number of entries were higher than a year ago they were less than was expected.

OFFICIAL OPENING

The Match was officially opened by the Hon. Leslie M. Frost. He was introduced by the Hon. Ray Connell, member for Hamilton-Wentworth. Others taking part included the Hon. W. A. Goodfellow, Warden Leslie Thomas, Mayor Lloyd Jackson of Hamilton, Wm. Wingrove, Chairman of the Local Committee. The Indian Band from the Six Nations provided music and led the wagon tour of guests through Tented City streets. The opening was preceded by a complimentary luncheon at noon for 150 guests including the speakers referred to above, other cabinet ministers and members of parliament, county council and City of Hamilton officials, representatives of Beverly Township Council and plowmen's associations, also chairmen of committees, O.P.A. directors and Department of Agriculture representatives.

Local Day Competition

As in other years the first day of the match was set aside as local day—open to contestants in Wentworth and neighbouring counties, namely Lincoln, Haldimand, Brant, Waterloo, Wellington and Halton.

There were 67 entries and total prize money offered amounted to \$2,222.00.

Inter-Country Competition

This class is open to teams of two contestants chosen by the Agricultural Representatives. Competitors were required to plow 2 classes, one in the regular way and the other where no handling of any kind is permitted. The total score is used in determining the winners. Sixteen teams took part compared with 12 a year ago and 14 in 1957.

The high team was from York County and its members were Kenneth O'Brien, Maple and Graeme Little, Agincourt. W. M. Cockburn, Agricultural Representative, was their coach. The two boys qualified for a trip to a Canadian province provided by British American Oil Company.

The high team in this class in 1958, George and Howard Malcolm (Ontario County) along with Kenneth Best, Agricultural Representative for Stormont, made a trip to the Calgary Stampede and the west coast in July.

Inter-Secondary School Competition

Fifteen teams as compared to 11 in 1958 and 14 in 1957 took part. It was won by West Haldimand District High School, also the winning team in 1958. Team members are Clayton Hunter, Hagersville and Joe Stoneman of Caledonia.

The West Haldimand team received the Canada Packers Challenge Trophy and each member got a handsome wrist watch from the same firm. While the prizes were presented at the banquet held in connection with the International, a more fitting recognition was made of the team's success at a special event held later at the school.

As an added feature and one entirely new to the International the Seaforth High School had their band in attendance to give moral support to their team.

Excellent support by the Department of Education, also principals, teachers and school boards was given this project.

Eaton's of Canada Class

The class was open to boys and girls under 18 years of age who had won the Eaton Trophy for Juniors at branch matches. A handsome trophy and \$100.00 in cash was offered as the first prize. George Malcolm, Locust Hill, was the winner.

Ontario Championship

There were 15 entries with Bill Dixon, Brampton, in first place and Robert Timbers, Mount Albert, as runner-up. Both entered the Canadian Contest held later in the week.

Esso Championship Class

The class was sponsored by Imperial Oil Limited. There were 16 entries with Donald Dunkeld, Claremont and Gordon Bradfield, Peterborough, winning first and second respectively. These boys will receive a free trip to the Maritime provinces in September.

The 1958 winners, George Dixon, Georgetown and Ivan McLaughin, Stouff-ville, were given a trip by the Company to Portage la Prairie, Manitoba, in June, where they competed in the provincial match. Alex. Black, president, was trip manager. Visits of educational interest were made at several points enroute.

Hydraulic plows with 14 inch bottoms were used. Despite the fact plows and soil conditions were strange to the contestants they made a very satisfactory showing.

CANADIAN CHAMPIONSHIP CONTEST

Seven provinces were represented namely: British Columbia, Manitoba, Ontario, Quebec, New Brunswick, Prince Edward Island and Nova Scotia, making a total of 14 contestants.

Imperial Oil Limited provided the cash prizes of \$500.00 also a silver plow challenge trophy and plaque, suitably inscribed, to the winner, Bob Timbers, Mount Albert. Wm. Dixon, Brampton, was 2nd but because a province cannot have more than one representative on the Canadian Team the honour went to Allan Hammond, Lachute, Quebec. Both Timbers and Hammond are former World Match contestants but in different years.

The Canadian team with Hubert Avery, Brockville, team manager, will compete in the World Match near Rome in Italy in October 1960.

Charles Bonney, Princeton, Ontario and Carl Willis, Cornwall, Prince Edward Island, with Ed. Hudek, Winnipeg, Manitoba, team manager, competed in the 1959 World Match near Armoy, Northern Ireland. Bonney won 2nd place and Willis 3rd. Apart from the first year of the World Match, 1953, when a Canadian, Jim Eccles of Brampton, won the World Championship with Bob Timbers in 3rd place, the showing by this year's team was the best on record.

Welding Competition

This competition attracted 69 entrants as compared to 79 in 1958. The Championship in Oxy-Acetylene Welding was Robert Blake, Simcoe, and in Arc Welding Stuart Roland, Ridgeville. Special awards for these championships were provided through the courtesy of Linde Co., Division of Union Carbide Canada Ltd. Toronto—Oxy-Acetylene Welding and Lincoln Electric Co. of Canada Ltd. Leaside—Arc Welding.

Demonstrations

A most interesting series of plowing and tillage demonstrations were put on in an area quite close to headquarters in co-operation with several of the large machinery companies. This was held on two days of the match. On the first day companies demonstrated the use of their most modern plows by plowing a complete land with strike out and finish. On the second day the plowed area was tilled. Companies participating were well pleased with the results and expressed the wish it be repeated next year.

Other demonstrations included Farm Safety, tree planting and plowing with a team of oxen.

Complimentary and Prize Presentation Banquet

Through the courtesy of the City of Hamilton a banquet was provided on the last evening of the match. Two large banquet halls with the overflow in a third one in the Sheraton Connaught Hotel took care of well over 1,000 guests. Among the speakers were Mayor Jackson of Hamilton and the Hon. W. A. Goodfellow, who extended greetings from his Department and the Government of Ontario.

Communal Stage

A large stage was made available and proved to be most convenient for opening ceremony, putting on programs, making announcements and introducing special visitors.

Canadian Broadcasting Corporation

For the first time on record the plowing match, with special recognition given the Canadian Contest, was televised by the Farm Department of the CBC. Elaborate equipment with high tower was installed for the purpose. Results were most gratifying and to say the least greatly appreciated by the management.

Hydro

It would be practically impossible to operate the plowing match without hydro and we are deeply indebted to Ontario Hydro-Electric-Power Commission for contributing this service without cost to our Association.

Telephones

Bell Telephone Company provided both local and long distance service for the full period of the match and for a number of days in advance of the opening.

Ontario Provincial Police

Through the courtesy of the Hon. Kelso Roberts, Attorney-General, who paid us a special visit, and under the capable supervision of Inspector Robbie, Dundas, a most efficient staff of Provincial Police officers was on the job the fulltime looking after traffic and keeping a watchful eye on all activities particularly those taking place in the exhibit area.

Farmstead Improvement Competition

Much similar to that undertaken by other counties acting as host to the International, Wentworth sponsored a Farmstead Improvement Competition. Over 100 farms were entered. Judging was done prior to the match and winners announced. The results of this competition were very much in evidence especially in the area where the match was held. A grant of \$500.00 was made by our Association to the prize list.

Survey

Replies received since the match from exhibitors on questionnaire forms would indicate reasonable satisfaction with the set-up. Some objected to high costs involved such as frontage rates and charges made by electricians and a few critized the food and the service. There were some helpful suggestions offered and these will be considered by the management in planning future matches. Practically all reported excellent telephone service and much improved toilet facilities.

Invitations from Counties

The 1960 Match will be at Springfield in Elgin County on the farm of Thos. Hume and Sons, October 11th to 14th. The Hume's and their neighbours are providing all the land required for Tented City, plowing contests, parking and demonstrations. Mr. Frank Pineo is Local Committee Chairman and Vic. Langton, Agricultural Representative, St. Thomas, is the Secretary.

Hastings County is planning for 1961 and have had a site near the City of Belleville chosen for over a year.

Grey County will be the location in 1962 and the farm will be that of Norman Barber, Owen Sound, one of our directors. The 1963 Match will be on the Conn Smythe Farm in Peel County.

HORTICULTURAL SOCIETIES

Horticultural Societies have been in operation in Ontario for well over a century and, like other Agricultural Associations, have received considerable government support. In 1907 societies were given special recognition through the passing of the Horticultural Societies Act by the Provincial Legislature. No doubt this was the result of a request from the Ontario Horticultural Association which had its official beginning in 1906.

There are 210 active societies under the Act at the present time. Four new societies were established during the pear—Georgina Brock, Merlin, Beachburg and Collins Bay. The membership stands at approximately 40,000. Fifty years ago it was 16,000. In 1926 membership was 54,000 and there were 270 societies. By 1931, 300 societies had been formed. While substantial progress has been made the membership as well as the number of societies has certainly not kept pace with the increase in population in Ontario.

Grants

The government appropriation for grants to horticultural societies, on basis of membership and horticultural expenditures, is \$40,000.00. It is line with a request made a couple of years ago by the Ontario Horticultural Association to the Minister of Agriculture whereby the grant should equal \$1.00 per member. The grant factor on membership was 39.7 and on horticultural expenditure 23.6. Fifteen Societies received the maximum grant of \$500.00. The 210 societies \$152,228.68 on horticultural projects.

Newsletter

As an extra service to societies and the association, a newsletter is being sent out by this branch under the name of the Department of Agriculture. It is designed to keep societies in formed on new developments, ideas, events and activities.

District Meetings

With the exception of Districts 12 and 14 in Northern Ontario, regular district meetings were held with the director in charge. This branch was represented at all of the meetings and assistance was given in conducting the program. The Board of the Association is comprised of the directors of the 16 districts.

Convention

The Association's annual meeting and convention was held in Hamilton with an attendance of 635 delegates. Help in organizing the program and carrying it out was given by our staff.

Awards

During the year 46 Horticultural Service Diplomas were issued. The Campbell Soup Co. Ltd., New Toronto, was awarded the Silver Medal and Award of Merit. Mrs. M. Cruise, Windsor, was presented with Trillium Pin Award.

Competitions Conducted by the Association

Bird House —	Bruce Fleming Diane Drope Brian Leonard	Simcoe Petrolia N. Roxborough	District 6. District 11. District 1.
Posters —	Chas. Bragg Denis Pilon Diana Nikula	White Oak Warren Stamford	District 6. District 13. District 9.
Wild Flower Essay —	Brig. G. McLeod F. E. Webster Mrs. Wm. McCa:		Goderich. Guelph. Thorold.

Photographic Competition (133 entries)

Class	I.	Class	2.
			Mrs. G. Morrison, Tara.
2nd	K. McKibbon, Guelph.	2nd	Rev. C. S. Indur, Clinton.
3rd	E. Stanley, Stamford.	3rd	Mrs. Burnett, Oshawa.
Class	3.	Class	4.
1st	G. W. Codner, Etobicoke.	1st	Guelph (Humber Gardens).
2nd	Mrs. Wm. McCann, Thorold.	2nd	Etobicoke (Children's Work).
3rd	W. R. Travers, Kingston.	3rd	Niagara Falls (Hospital).

A new type of competition supported by the Toronto Star has been introduced. \$2,000.00 is offered to Horticultural Societies and the Association in prize money for the best 400-800 word essays written by elementary school pupils on a woodland flower, shrub or tree. It is expected that practically all societies will cooperate.

COMMUNITY CENTRE GRANTS

April 1, 1959 to March 31, 1960

Municipality	Centre	Amount
Twp. of Michipicoten Dept. of Recreation & Parks, Ottawa	Arenas Michipicoten Elmgrove Park	\$ 5,000.00 5,000.00 4,500.00
Twp. of Assiginack	Manitowaning Port Credit	5,000.00
Total — 4		\$19,500.00
Twp. of N. Cayuga	Halls Canfield	\$ 580.00 5,000.00
City of Toronto Twp. of Glanford Twp. of Blezard	University Settlement Mount Hope (Lions) Val Caron	1,170.00 5,000.00
Town of Bala Twp. of Scott	Bala	5,000.00 105.00
City of Cornwall Twps. of Denbigh, Abinger &	Athletic Grounds	625.00
Ashby Town of Strathroy	Denbigh	30.00 5,000.00
Town of Ajax	Ajax	2,600.00 4,500.00 840.00
Twp. of Howick	Fordwich Lucknow Sealy Park	1,700.00 890.00

Municipality	Centre	Amount
Twp. of Holland	Walters Falls	540.00
Town of Bracebridge	Bracebridge	5,000.00
Twp. of Adelaide	Craithie	100.00
Twp. of Rama	Longford Mills	2,995.00
Twps. McCrosson & Tovell	Bergland	310.00
Twp. of Scarborough	Cedar Brook Arts & Crafts	5,000.00
Twp. of Markham	Crosby Memorial (Unionville)	5,000.00
Twp. of Glanford	Mount Hope	5,000.00
Village of Fenelon Falls	Fenelon Falls	1,500.00
Town of Whitney	Brockville Civic Auditorium Whitney Twp.	5,000.00 965.00
Twp. of Whitney Twp. of Egremont	Holstein	725.00
Twp. of Morson	Morson	695.00
Town of Port Hope	Senior Citizens	345.00
City of Belleville	Pinnacle Street	5,000.00
Twp. of North York	Wilmington Park	5,000.00
Total — 30		\$76,215.00
	Arena & Hall	
Twp. of Elma	Monkton	\$ 285.00
Town of Watford	Watford	5,000.00
Twp. of Wallace	Kurtzville	600.00
Twp. of Black River	Val Gagne	1,465.00
Town of Hawkesbury Town of Port Colborne	Hawkesbury Port Colborne	10,000.00
Town of fort condottie	Tort dolborne	10,000.00
Total — 6		\$ 27 , 350.00
m	Athletic Fields	A 005.00
Twp. of Goulburn	Goulburn	\$ 265.00
Twp. of Logan	Brodhagen	535.00
Twp. of West Flamboro Town of Dundas	Strabane	760.00 2,190.00
Twp. of North York	Glenlong Park	5,000.00
Twp. of North York	Kinsmen Park	5,000.00
Twp. of North York	Ledbury Park	3,000.00
Twp. of North York	Roding Park	5,000.00
Twp. of Moore	Corunna	720.00
Twp. of Emo	Emo	3,835.00
Village of Victoria Harbour	Victoria Harbour	660.00
Twp. of Scott	Zephyr	155.00
Twp. of Barton	Barton Twp.	830.00
Town of Arnprior Town of Arnprior	Chats Haven	100.00
Town of Amprior	Meadows Playground Town Park	240.00
Town of Arnprior	Norma Street	395.00 35.00
City of Cornwall	Adams Park	2,000.00
City of Cornwall	Alexander Park	2,500.00
City of Cornwall	Athletic Grounds	2,500.00
City of Cornwall	Dover Heights Park	750.00
City of Cornwall	Horovitz Memorial Park	2,500.00
City of Cornwall	King George Park	2,500.00
City of Cornwall	Kinsmen Park	2,500.00
City of Cornwall	Memorial Park	2,500.00
City of Cornwall	Riverdale Park	2,500.00
City of Cornwall	St. Joseph Park St. Therese Park	2,500.00
Twp. of Pickering	Rouge Hill Park	1,500.00 1,675.00
Twp. of Williamsburg	Williamsburg	320.00
Twp. of Darlington	Zion (Hampton)	1,050.00
City of Chatham	Tecumseh Park	5,000.00

Municipality	Centre	Amount
Village of St. Clair Beach	St. Clair Beach	2,720.00
Twp. of Sandwich South	Cabana Road	825.00
City of Peterborough	Peterborough	4,500.00
Twp. of Scarborough	# 401 Park	230.00
Twp. of Scarborough	Agincourt	385.00
Twp. of Scarborough	Birchmount	220.00
Twp. of Scarborough	Blantyre	70.00
Twp. of Scarborough	Bluffers Park	370.00
Twp. of Scarborough	Cedar Brook Park	1,375.00
Twp. of Scarborough	Clairlea Park	410.00
Twp. of Scarborough	Craighton Park	235.00
Twp. of Scarborough	Dean Var	330.00
Twp. of Scarborough	Dorset Park	355.00
Twp. of Scarborough	Highview	85.00
Twp. of Scarborough	Horton Park	50.00
Twp. of Scarborough	Manhattan Park	255.00
Twp. of Scarborough	Maryvale Park	285.00
Twp. of Scarborough	McGregor Park	205.00
Twp. of Scarborough	Mooregate Park	310.00
Twp. of Scarborough	Orton Park	65.00
Twp. of Scarborough	Regents Park	40.00
Twp. of Scarborough	Sandown Park	85.00
Twp. of Scarborough	Scarborough Village Park	50.00
Twp. of Scarborough	Terraview Park	710.00
Twp. of Scarborough	Thomson Park	185.00
Twp. of Scarborough	Treverton Park	705.00
Twp. of Scarborough Twp. of Westminster	Wexford Park Murray Park	245.00 580.00
Twp. of Essa	Angus	80.00
Town of Richmond Hill	Richmond Hill	285.00
Town of Sioux Lookout	Sioux Lookout	450.00
Twp. of Scarborough	Scarborough Village	4,730.00
Village of Flesherton	Flesherton	85.00
Village of Brussels	Brussels	795.00
Village of Hastings	Hastings	310.00
Twp. of Medonte	Hillsdale	1,340.00
Town of Acton	Acton	3,955.00
Town of Dresden	Dresden	140.00
Town of Cochrane	Cochrane	350.00
Town of Kapuskasing	Brunettville	5,000.00
Twp. of Brock	Port Bolster	1,605.00
Dept. of Parks & Recreation		
Ottawa	Mooney's Bay	5,000.00
Twps. Macdonald, Meredith &	2.200.10, 2.20, 111111111111111111111111111111111111	-,
Aberneed Add'l	Echo Bay	230.00
Town of Fort Frances	Rotary Park	175.00
Town of Fort Frances	East Énd	150.00
Twp. of Saltfleet	Winona	300.00
Twp. of Egremont	Holstein	60.00
Twp. of Euphrasia	Walters Falls	115.00
City of London	Doidge Playground	880.00
City of London	Victoria Park	1,500.00
City of London	Grosvenor & Elliott St	3,475.00 1,650.00
City of London	Gibbons Park	1,160.00
R.C.S.S. No. 1	River Valley	1,310.00
Town of Port Colborne	Port Colborne	4,000.00
Twp. of Dover	Mitchell Bay	595.00
1		

Municipality	Centre	Amount
Twps. Neelon & Garson Twp. of Oro Twp. of Larder Lake Village of Fonthill Twp. of Westmeath	Out-Door Rinks Lebel	\$ 2,065.00 115.00 2,465.00 118.00 1,775.00
Twps. Denbigh, Abinger & Ashby Twp. of Fauquier Twp. of Scott Twps. Macdonald, Meredith &	Denbigh Moonbeam Zephyr	30.00 1,950.00 700.00
Aberdeen Add'l	Echo Bay Whitney Waterdown Bar River Kinburn	525.00 1,630.00 1,605.00 215.00 340.00
Total — 13		\$13,533.00
Twp. of Tuckersmith Board of Education, Chatham Town of Cobourg Twp. of North York Twp. of North York Twp. of North York Town of Pembroke City of Cornwall Town of St. Mary's Town of Rockland Town of Brockville Twp. of Sandwich West Twp. of Sandwich West Twp. of Thorold Village of Fonthill Village of Rodney Town of Cochrane Town of Englehart Village of Thamesville R.C.S.S. No. 1, Crerar Twp. of North York Twp. of North York	Swimming Pools Tuckersmith Twp. Herman Collegiate Victoria Park Northview Heights North York Memorial York Mills Eastward Horovitz Memorial St. Mary's Rockland Brockville Central Park La Salle Youth Centre McAdam Park Fonthill Rodney Amherstburg Cochrane Englehart Thamesville River Valley Bathurst Heights Collegiate Downsview Collegiate	\$ 5,000.00 5,000.00 1,220.00 5,000.00 5,000.00 4,500.00 1,085.00 5,000.00 5,000.00 5,000.00 5,000.00 5,000.00 5,000.00 1,765.00 1,765.00 1,545.00 5,000.00 5,000.00
Total — 23		\$82,195.00
	Total Paid in Grants — Arenas Halls Arena & Hall Athletic Fields Out-Door Rinks Swimming Pools	\$ 19,500.00 76,215.00 27,350.00 116,620.00 43,533.00 82,195.00 \$335,413.00

Dairy Branch

The Dairy Branch is responsible for the administration and enforcement of The Milk Industry Act, 1957. Under the provisions of the Act, the personnel of the Dairy Branch work for the improvement of all segments of the dairy industry within the province. The Dairy Commissioner is responsible for the co-ordination and supervision of the administration of The Milk Industry Act, 1957. The Milk Industry Board is the decision-making authority under the Act and is responsible for its enforcement.

For administrative purposes the Dairy Branch is divided into the Fluid Milk Division and the Milk Products Division. In the field, the province is currently divided into 27 districts with a senior fieldman in charge of each district who is responsible for all aspects of the production and marketing of milk and cream. In addition, there are eight fieldmen responsible for the cheese industry; three fieldmen who act as assistants; two as inspectors under The Oleomargarine and Edible Oil Products Acts and two fieldmen working out of head office, who act as field supervisors and auditors. There is a total of 43 men on the Dairy Branch field staff.

The Milk Industry Advisory Committee

Legislation provides for the appointment of a Milk Industry Advisory Committee the main purpose of which is to advise the Minister on industry matters. From the spring of 1958 to December 1959, this Committee has been inactive. However, with the increased interest in a new producer milk marketing plan, it was reconvened on December 29th. Meetings have been held almost monthly since that date. This Committee provides a common meeting place for both processor and producer groups. It is now considered that The Milk Industry Advisory Committee will play a most important part in the affairs of the dairy industry. The current members of The Milk Industry Advisory Committee are: John Anstis, S. K. Ault, R. E. Drope, K. E. Gordon and Wray Woods, representing the processors and G. Cole, O. Coon, K. Crews, L. Davis, W. Keays and J. C. Weaver representing the producers with J. C. Palmer, Associate Director of Dairying, as Secretary.

The Ontario Milk Producers' Co-ordinating Board

The Ontario Milk Producers' Co-ordinating Board is set as a body corporate under The Milk Industry Act, 1957, and is made up of five members from each of the four dairy producer groups officially organized and recognized under the Act; namely, The Ontario Cheese Producers' Marketing Board, The Ontario Concentrated Milk Producers' Marketing Board, The Ontario Cream Producers' Marketing Board and The Ontario Whole Milk Producers' League. While this group has fuctioned unofficially for many years, its official authority was first provided for under The Milk Industry Act, 1954. The main purpose of this board is to co-ordinate the thinking and planning of the four producer groups in an endeavour to improve the production and marketing of milk and milk products. It provides an official contact for The Milk Industry Board with the producers.

The Ontario Dairy Processors' Council

The Ontario Dairy Processors' Council is organized on a similar basis to The Ontario Milk Producers' Co-ordinating Board but is not officially recognized in

the Act. Its purpose is essentially the same as that of the Co-ordinating Board and is considered to be the official contact group for the processors by The Milk Industry Board. The processor groups represented on the Council are: The Ontario Cheese Manufacturers' Association, The Ontario Concentrated Milk Manufacturers' Association, The Ontario Creamerymen's Association, The Ontario Ice Cream Manufacturers' Association and The Ontario Milk Distributors' Association.

The Formula Committee for Fluid Milk

The Formula Committee was first appointed by order-in-council on December 5, 1957. The members were Everett M. Biggs, Chairman, Dr. H. L. Patterson and Professor Ralph Campbell. With Mr. Biggs's promotion to Assistant Deputy Minister, he was replaced by J. L. Baker, as Chairman, in January 1960. This Committee studied and set up the present formula for calculating the price to be paid to producers for fluid milk. The Committee regularly reviews the indices on which the formula is based.

Staff

Several changes took place during the year in the Dairy Branch personnel, particularly at Head Office. With the promotion of Dairy Commissioner, Everett M. Biggs, to the position of Assistant Deputy Minister in charge of Marketing, on January 6, 1960, J. L. Baker, who had been Director of the Milk Products Division was promoted to the position of Director of Dairying to succeed him. J. C. Palmer, who was Associate Director, Milk Products Division, was promoted to the position of Associate Director of Dairying, whose main duties, in addition to being next to the Director of Dairying in charge of the Branch, are to develop and supervise the milk quality program in the province. J. M. Bain, who had been Assistant Director, Milk Products Division, in charge of cheese operations succeeded J. L. Baker as Director of this Division. J. F. Robinson, who had been Chief Cheese Instructor for Eastern Ontario was promoted at the same time to the position of Chief Instructor of Cheese Operations in Central and Eastern Ontario with headquarters at Kemptville. C. M. Meek continues as Director of the Fluid Milk Division and A. P. Clark as Secretary of The Milk Industry Board and Assistant Director of the Fluid Milk Division.

Closely associated with the quality program of the Dairy Branch is Professor Fred W. Hamilton, Extension Dairy Fieldman, with the Department of Dairy Science, at the Ontario Agricultural College. Professor Hamilton is concerned mainly with producer problems, particularly in respect to quality and in developing extension programs with producers and plant personnel.

Exhibitions and Fairs

The Dairy Branch co-operated and helped with dairy industry promotion at The Canadian National Exhibition, The Western Fair, Ottawa Winter Fair, The Royal Agricultural Winter Fair, Middlesex Seed Fair, North Bay Rotary Fair, as well as several local and county fairs throughout the province.

A major dairy industry promotion project in which the Dairy Branch cooperated with the Canadian National Exhibition and the Milk Producers' Coordinating Board has been the Dairy Queen Competition. Area fieldmen organized county committees for the selection of County Dairy Princesses during the summer. Forty-five County Princesses competed in the 1959 competition. The winner of the fourth annual competition was Miss Anne Spaull of the District of Sudbury. Miss Spaull won as a special prize, a trip to the United Kingdom via Pan American Airways, and while there represented the Ontario dairy industry particularly at The National Dairy Show in London in October. During the year Miss Spaull

attended many functions throughout Ontario promoting the dairy industry. Plans are already underway for the 1960 competitions.

The Dairy Branch continued the annual grants of \$200 to each of the competitive exhibitions conducted by the Dairymen's Association of Western Ontario, Hamilton; The British Empire Cheese Show, Belleville, and The Eastern Ontario Cheese Show held in conjunction with the Ottawa Winter Fair.

Milk Marketing

With the integration of dairy plant operations, it became more apparent to the milk and cream producers that the current marketing set-up should be revised. Considerable study was given during the year to the possibilities of introducing a price blending plan to cover all of Ontario. Representatives of the four producer groups, during the year, visited and studied the milk marketing set-up in British Columbia, Minneapolis-St. Paul, New York, The United Kingdom, Sweden and Denmark. To date nothing more than exploratory information has been forthcoming and the principles which might be involved in a new milk marketing plan and a price blending plan have been and are continuing to be discussed at milk producer meetings.

Publications

The Dairy Publications Sub-Committee under the Department of Agriculture continued to function under the chairmanship of the Dairy Commissioner. The committee includes representatives from the Department of Dairy Science, Ontario Agricultural College, and the Dairy Division of the Kemptville Agricultural School. The committee works closely with the industry and others concerned to determine the publication and bulletin needs.

Research

The Ontario Dairy Research Committee met several times during the year to review progress being made in research studies and surveys currently in progress and to assess the need for study and investigation on new projects. This committee is under the Chairmanship of Dr. D. M. Irvine, Head of the Department of Dairy Science, Ontario Agricultural College, with the following members: E. M. Biggs, J. L. Baker, C. M. Meek, J. C. Palmer and J. M. Bain of the Dairy Branch, O. R. Irvine, Kemptville Agricultural School, two producer members and two processor members. Through this committee there is close liaison with both the producing and processing sides of the industry in respect to the needs for new research studies and investigations.

During the year 1959-60, members of the Dairy Branch staff co-operated as instructors at the three-month Dairy Short Course held at the Kemptville Agricultural School and the Bulk Tank Drivers' Short Courses held at both the Ontario Agricultural College and the Kemptville Agricultural School. The fieldman assisting at the three-month Dairy Short Course was bilingual in order to provide instruction in French to the French-speaking students attending.

Press, Radio and Television

During the year, closest co-operation continued with the press, radio and television particularly with those associated with agriculture. Members of the Dairy Branch staff have made several radio broadcasts, some telecasts and several reordings on dairy subjects for the local stations. The Dairy Commissioner made a number of network broadcasts. Three fieldmen now have regular bi-weekly broad-

casts over their local station. Three members of the staff along with Professor Hamilton co-operated with one television station in producing four telecasts on the history, development and current picture of dairying in their area. One of these included a film depicting the work of a Dairy Branch fieldman with particular emphasis on the assistance given to producers of milk, while another featured the use of milk products in the home.

Meetings Outside Ontario

Mr. Everett M. Biggs attended The International Dairy Congress held in London, England, in June, 1959, as one of Ontario's official representatives. While in the United Kingdom, Mr. Biggs studied the milk marketing plans operating there, as well as a study of the import possibilities of Canadian cheese into that country. Mr. V. T. Jensen attended the New York Milk Sanitarians' Annual Meeting at Rochester, in September. Later that month, Mr. C. M. Meek attended the annual meeting of The International Association of Milk Control Agencies held in Philadelphia.

The Oleomargarine Act

The Oleomargarine Act is administered by the Dairy Commissioner, who is appointed as Chief Inspector under the Act. With the promotion of Mr. Biggs to Assistant Deputy Minister, J. L. Baker was appointed Chief Inspector. All manufacturers and wholesalers of oleomargarine are licensed. Strict supervision is given to the advertising, composition and sale of oleomargarine with particular emphasis on wholesaler and retail outlets and in eating establishments. Two field inspectors devote all their time to the enforcement of The Oleomargarine Act. In addition, the 27 district fieldmen are also appointed inspectors, in order to be available to handle specific problems within their territory. These men do not carry out normal routine inspections.

Considerable difficulty has been encountered with the influx of an illegal, poor quality spread from the Province of Quebec. Controlling this problem has taken considerable time by the inspectors.

The following is a summary of the inspections made under The Olemargarine Act during the year:

		195 8		1959	
Number	of cities, towns and villages covered	163		172	
23	of manufacturers licensed	10		10	
39	of manufacturers inspected	10		10	
22	of wholesalers licensed	130		129	
22	of wholesalers checked	40		45	
59	of wholesalers licensed as result of inspection	2		6	
99	of restaurants inspected	1,924		1,742	
11	of restaurants not using oleomargarine in any form		55.19%	978	56.14%
"	of restaurants using oleomargarine for cooking	525	27.28%	424	24.24%
33	of restaurants using oleomargarine on toast	105	5.46%	116	6.66%
99	of restaurants using oleomargarine on sandwiches	232	12.06%	234	13.37%
99	of restaurants mixing margarine with butter		9.04%	186	10.67%
"	of restaurants complying with regulations	55		52	
99	of brands of oleomargarine being sold			30	
19	of retail outlets checked	1,030		1,240	
29	of moisture tests made	34		12	

There were 145 analyses made on oleomargarine samples by the Ontario Research Foundation for this office. There were 66 lots of coloured oleomargarine placed under detention by our inspectors and subsequently confiscated. This illegal spread was mainly found in the small retail outlets. There were six different brands of this spread located. When found, the quantities in each lot were small.

The Edible Oil Products Act, 1952

The Edible Oil Products Act is administered by the Dairy Commissioner, who is appointed Chief Inspector under the Act. With Mr. Biggs promotion to Assistant Deputy Minister, J. L. Baker succeeded him as Chief Inspector. The field inspectors appointed under The Oleomargarine Act are also appointed inspectors under The Edible Oil Products Act. The Act provides for the licensing of all manufacturers and wholesalers of edible oil products designated as such. A designated product is one which does not contain a dairy product but is manufactured with fat or oil other than milk fat. One manufacturer and four wholesalers were licensed in 1959 under this Act.

The Milk Industry Board of Ontario

The Milk Industry Board of Ontario is primarily a decision-making board appointed under The Milk Industry Act, 1957 and is charged with its enforcement.

The present Board is constituted as follows: Judge A. B. Currey, Chairman; Gordon Greer, Member and W. Frank Jones, Member. The secretary is Mr. A. P. Clark.

MEETINGS OF THE MILK INDUSTRY BOARD

	1958	1959
Meetings Held	33	32
Public Inquiries		5
Decisions Made	545	531
Arbitration Hearings re Producer Prices and Milk Trans-		
portation Rates	9	7

The Board endeavours to sit for two-day meetings every month and if necessary at more frequent intervals. The first day of each sitting is set aside for problems concerning fluid milk and the second day for milk products.

The reports of the Fluid Milk Division and the Milk Products Division cover the other activities of the Board.

Milk Produced by Different Classes of Producers

With the interest in changes in the milk marketing program some attempt has been made to categorize the various classes of producers and relate to these producers the amount of milk produced by them. The following table, while approximate, places 45% of the butter as produced by concentrated milk producers and 55% produced by cream producers.

APPROXIMATE NUMBER OF PRODUCERS AND POUNDS OF MILK PRODUCED BY SAME IN ONTARIO

		1958	1959		
Fluid Milk	Producers 10,749 19,725 8,857 37,656	<i>Milk</i> 2,042,000,000 1,594,000,000 762,000,000 1,151,000,000	Producers 11,413 17,865 10,127 38,098	Milk 2,111,000,000 1,644,000,000 833,000,000 1,121,000,000	
TOTAL	76,987	5,549,000,000	77,503	5,709,000,000	

FLUID MILK DIVISION

The Dairy Industry continues, as in former years, to be one of the main sources of farm income. The estimated farm value of milk produced on Ontario farms in 1959 approximated \$204,751,000 and of this amount the fluid milk producers realized an income of \$89,336,000 for milk supplied to fluid milk distributors.

TOTAL MILK PURCHASES FROM FARMERS BY COMMERCIAL DAIRIES FOR FLUID SALES

Total Standard and Special	1958	1959
Fluid Milk bought (lbs.) Average price per cwt. Total Cost	1,512,066,700 \$4.95 \$74,780,000	1,571,668,300 \$5.01 \$78,691,400
Total Standard and Special Secondary Milk bought (lbs.)	422.759.100	398,929,400
Average price per cwt	\$2.80 \$11,854,600	\$2.67 \$10,645,000
Total Milk bought (lbs.) Average price per cwt. Total Cost	1,934,825,800 \$4.48 \$86,634,600	1,970,597,700 \$4.53 \$89,336,400

FLUID MILK SALES (QUARTS) IN ONTARIO

Year		Yearly	Average Monthly	Average Daily
1938		240,465.400	20.038,783	658,809
1939		250,406,200	20,867,183	686,044
1944		409,964,000	34,163,666	1,121,499
1949		433,005,000	36,083,750	1,186,315
1954		477,221,800	39,768,483	1,307,457
1955		502,009,400	41,834,100	1,375,400
1956		513,407,625	42,783,968	1,406,596
1957		535,612,000	44,634,333	1,467,430
1958		544,027,600	45,335,633	1,490,000
1959		561,582,900	46,798,575	1.538.583
	From Mont	hly Dairy Report.	Ontario Department of	Agriculture

COMMERCIAL SALES OF FLUID MILK, CREAM, CHOCOLATE DAIRY DRINK, and BUTTERMILK IN ONTARIO, BY YEARS

	Fluid Milk	Fluid Cream	Chocolate Dairy	Buttermilk	Skim Milk
Year 1952 1953 1954 1955 1956 1957 1958 1959	Quarts 443,660,500 460,042,200 477,221,800 502,009,400 513,407,625 535,612,000 544,027,600 561,582,900	Quarts 13,677,700 14,714,300 15,265,800 16,068,200 17,184,509 17,903,200 18,835,900 19,952,900	Drink—Quarts 14,575,500 13,848,600 11,805,900 14,428,500 15,612,300 15,072,000 14,795,700 17,190,100	Quarts 5,588,500 6,501,200 6,700,800 8,006,200 7,598,500 8,367,500 7,887,800 8,646,800	Quarts 18,277,500 20,740,400 24,081,800 27,662,100 30,462,800 34,924,500 35,593,800 36,551,400

FLUID MILK PRODUCTS SALES IN PAPER CONTAINERS FOR ONTARIO AND FIVE CITIES FOR THE LAST SIX MONTHS OF 1959 — EXPRESSED AS A PERCENTAGE OF SALES IN THE RESPECTIVE CONTAINER SIZES AND PERCENTAGE OF TOTAL

		Hamilton	London	Ottawa	Toronto	Windsor	Province
		%	%	%	%	%	%
Standard	Gals.		_		_		
Milk	3 Qt.	-	_	-			_
212 0010	2 Qt.	36.2	_	_	43.6		38.8
	1 Qt.	20.5	32.7	34.7	27.9	19.8	19.5
	1 Pt.	88.4	61.6	92.3	82.0	67.9	64.5
		0 Oz. 66.1	63.6	90.5	87.4	14.4	65.7
	Total Qts.	25.2	23.7	35.5	32.6	20.2	21.6
Special	Gals.						
Milk	3 Qt.						
272 0070	2 Qt.		_		-		
	1 Qt.		2.9	73.6	0.2	0.1	11.3
	1 Pt.				25.2		16.0
	½ Pt.	- Community	_	_	7.0		4.6
	Total Qts.		2.8	73.6	0.8	0.1	11.2
Partly	Gals.	-		_	_		
Skimmed	3 Qt.						
Milk	2 Qt.	44.1			32.9		31.1
Z+Z 0010	1 Qt.	19.8	31.3	46.8	18.6	12.6	20.7
	1 Pt.						_
	½ Pt.	-	100.0				58.7
	Total Qts.	27.8	17.3	46.4	21.1	12.5	20.5
Fluid Milk	Total Qts.	24.7	22.1	37.8	30.3	19.8	21.3
Skim Milk	Gals.			_	_		
0.000.0	3 Qt.			annea.	-		
	2 Qt.	16.8	_	-	15.4		15.3
	1 Qt.	11.5	24.1	34.5	19.8	6.9	12.6
	1 Pt.				72.5		58.0
	½ Pt.	100.0		-	93.2		93.3
	Total Qts.	12.6	16.7	33.7	20.0	6.6	13.1
Buttermilk	Gals.						
	1 Qt.	40.2	57.9	80.1	43.9	34.4	38.8
	1 Pt.	94.6		100.0	95.6	86.9	83.8
	½ Pt.	82.9		100.0	77.8	-	77.0
	Total Ots.	46.3	54.5	79.6	46.9	38.0	40.6
Chocolate	Gals.						
Dairy	1 Qt.	27.5	35.4	55.6	31.0	14.4	22.3
Drink	1 Pt.	87.7	70.8		86.4	62.1	57.6
	½ Pt. 1	0 Oz. 58.3	56.6	87.3	85.9	21.5	47.8
	Total Qts.	52.3	50.6	68.7	63.0	27.5	37.5
Half & Ha	lf Gals.						
Cereal	1 Qt.	25.7	21.8	74.0	28.5	16.3	27.5
Cream	1 Pt.			88.8		25.8	51.4
	½ Pt.	98.7	100.0	80.9	44.1	26.7	45.9
	Total Qts.	27.3	19.9	70.3	25.9	16.9	27.4
Table	Gals.		_			_	100
Cream	1 Qt.	17.3	39.8	34.2	30.4		19.9
	1 Pt.	_		51.2	64.6		49.5
	$\frac{1}{2}$ Pt.	20.2	33.1	60.2	39.0	_	24.8
	Total Qts.	17.1	36.3	37.7	33.8		23.1
Whipping	Gals.				7.0	31.6	10.5
Cream	1 Qt.	6.0	16.7	59.1	7.0	31.0	13.2
	1 Pt.			40.4	2.1	38.6	31.6
	½ Pt.	29.8	37.3	69.9	60.0	34.5	23.0
	Total Qts.	20.1	29.1	59.1	35.9	16.9	24.0
Total Fl	uid Cream		29.9	57.8	27.5	10.9	27.0

SALES OF MILK AND CREAM IN THE PROVINCE OF ONTARIO BY TYPE OF CONTAINER EXPRESSED IN QUARTS FOR THE LAST SIX MONTHS OF 1959

		2010 212		Percentage Percentage	PERCEN	TAGE IN
				Of Total	Paper	Glass
Standard		Gals.	11,569,232	4.5	- uper	100.0
Milk		3 Qt.	7,153,179	2.8		100.0
212 0010		2 Qt.	21,276,462	8.4	38.8	61.2
		1 Qt.	203,328,801	80.0	19.5	80.5
		1 Pt.	6,633,752	2.6	64.5	35.5
		½ Pt. 10 Oz.	4,276,454	1.7	65.7	34.3
	Total (254,237,880	-	21.6	78.4
Special		Gals.	21,262	0.3	-	100.0
Milk		3 Qt.	37,146	0.6	-	100.0
		2 Qt.	3,248	0.1		100.0
		1 Qt.	5,9 31,573	95.5	11.3	88.7
		1 Pt.	152,633	2.4	11.3	84.0
		½ Pt.	67,414	1.1	4.6	95.4
D	Total (6,213,276	2.5	11.2	88.8
Partly Skimmed		Gals. 3 Qt.	692,342 3 ,489 , 930	12.8	STATE OF THE PARTY	100.0 100.0
Milk		2 Qt.	7 ,573,314	27.8	31.1	68.9
272 1111		1 Qt.	15,429,008	56.7	20.7	79.3
		1 Pt.	4,987	0.02		100.0
		Pt.	15,447	0.05	58.7	41.3
	Total (27,205,028		20.5	79.5
Fluid			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Milk	Total 9	Qts.	287,656,184		21.3	78.7
Skim Milk		Gals.	390,492	2.2		100.0
		3 Qt.	489,956	2.7		100.0
		2 Qt.	1,601,468	8.9	15.3	84.7
		1 Qt.	15,326,101	85.1	12.6	87.4
		1 Pt.	33,351	0.2	58.0	42.0
		Pt.	164,042	0.9	93.3	6.7
D., 44 277.	Total (18,005,410	2.2	13.1	100.0
Buttermilk		Gals. 1 Ot.	104,233 4,272,135	91.7	38.8	61.2
		1 Pt.	239,548	5.1	83.8	16.2
		Pt.	47,137	1.0	77.0	23.0
	Total (4,663,053		40.6	59.4
Chocolate		Gals.	276,707	2.9		100.0
Dairy		1 Qt.	4,308,686	44.7	22.3	78.7
Drink		1 Pt.	2,430,040	25.2	57.6	42.4
		½ Pt.	2,631,853	27.3	47.8	52.2
	Total 9		9,647,286		37.5	62.5
Half & Ha	*	Gals.	633,830	13.3		100.0
Cereal		1 Qt.	3,275,717	68.9	27.5	72.5
Cream		1 Pt.	299,400	6.3	51.4	48.6
		½ Pt.	546,250	11.5	45.9	54.1
Table	Total 9	Gals.	4,755,197 332,257	9.7	27.4	72.6 100.0
Cream		1 Qt.	1,522,557	9.7 44.7	19.9	80.1
Crount		1 Qt. 1 Pt.	398,277	11.7	49.5	50.5
		½ Pt.	1,153,308	33.9	24.8	75.2
	Total 9		3,406,399		23.1	76.9
Whipping		Gals.	51,096	3.6	-	100.0
Gream		1 Qt.	422,271	30.9	10.5	89.5
		1 Pt.	66,040	4.8	13.2	86.8
		½ Pt.	829,290	60.7	31.6	78.4
400	Total (1,368,697		23.0	77.0
Total Fla	uid Cred	am	10,076,941	_	24.0	76.0

SALES OF PARTLY SKIMMED MILK BY COMMERCIAL DAIRIES IN ONTARIO NOVEMBER 1956 to MARCH 1959

	Sales	Sales Index
Month	(Quarts)	Nov. 1956 — 100
November 1956	1,022,700	100
March 1957	1,690,700	165.3
March 1958	2,891,300	282.7
March 1959	3,835,222	375
March 1960	5,585,395	546

CONSUMER PRICES

The price which producers receive for milk increased by nineteen cents per one hundred pounds on October 1, 1959 in accordance with the Price Formula, which practically all markets in the Province have adopted and incorporated in collective bargaining agreements filed with the Board. In a few markets, where the Formula is not incorporated in the collective bargaining agreement, the price was increased by nineteen cents in line with the Formula markets.

Accordingly, the consumer price was increased in most markets by one cent per quart. However, in a few markets the price to the consumer was not increased among which were the markets of Timmins and Kirkland Lake.

In our largest market, Toronto, where store differentials and multiple containers are widely used, the consumer prices prevailing after October 1, 1959, were as follows:

	H	ome D	elivered	Cash &	Carry	(Store)	
	½ Gal.	Qt.	Pt.	$\frac{1}{2}$ Pt.	3 Qt.	2 Qt.	1 Qt.
Standard Milk		.25	-		.57	.42	.23
Standard Homogenized	.46	.25	.16	annual particular part	.57	.42	.23
Special Milk		.27			*******		-
Partly-Skimmed (2%)	.42	.23		Service (III)	.51	.39	.21
Skim Milk	.36	.19	-		***************************************	-	
Buttermilk		.22	.14	-	dimensi .	delicensis	
Chocolate Drink		.26	.16		-	Approximately 1	-
Cereal Cream	-	.50		.20			
Table Cream	-	.70	.47	.25	-		
Whipping Cream		1.20		.42	-	-	

PRICE FORMULA FOR FLUID MILK

The Price Formula for Fluid Milk as outlined in Regulation 105/58 is included in the majority of collective bargaining agreements throughout the Province.

In accordance with its terms the formula price increased .19¢ per cwt. to \$5.10 effective October 1, 1959. This was the first and only change since October 1, 1957 when there was a .19¢ increase.

The Table herewith shows the History of the Formula Price since its inception in 1954.

PRICE FORMULA CALCULATIONS

		Formul	a Price 3 Months	Change in 1 Monthly Plus 3 Monthly Plus 4 Monthly P	nths Average	
Mot	nth	Monthly	Average	or Minus Plus	or Minus	Price
July	'54	4.48	4.48			4.53
July	'55	4.645	4.62	.115		4.53
Aug.	'56	4.716	4.66	.186	.13	4.53
Sept.	36	4.7238	4.6955	.1938	.1655	4.53
Oct.	'56	4.7463	4.7288	.2163	.1987	4.72

			Л	New Basic Price effe	ctive November .	1, 1956—\$4.72
July	' 57	4.8943	4.8903	.1743	.1703	4.72
Aug.	'57	4.9286	4.9066	.2086	.1866	4.72
Sept.	'57	4.9419	4.9216	.2219	.2016	4.91
				New Basic Price e	ffective October.	<i>1,1957</i> —\$4.91
Oct.	'57	4.9653	4.9452	.0553	.0352	4.91
Sept.	'59	5 .1836	5.1570	.2735	.2470	5.10
-				New Basic Price e	ffective October	1, 1959—\$5.10
Oct.	'59					5.10

BULK MILK HANDLING

The farm bulk tank method of handling milk continued to grow and as of March 31, 1960, some 4,700 producers supplying fluid milk markets have installed farm bulk tanks.

GROWTH OF BULK METHOD OF HANDLING MILK

GROW I'II OF BOLK METHOD OF HANDLING MILK												
Number of						Number of Number of						
Market	Market Dairies				Bulk Transports			ts	Bulk Producers			
	1957	1958 1	959	1960	1957				1957	1958	1959	1960
A		2	1		3	3	2		55	56	36	48
Aurora	2			2				2				
Barrie	1	1	1	2	1	1	1	2	31	38	41	65
Blenheim				1				1		-		19
Bolton	1	1	1	1	1	1	1	1	7	8	7	8
Bowmanville		1	1	1		1	1	1	-	13	13	13
Brampton				1			-	1		-		3
Brantford				3			-	7				89
Chatham				1				1		-	_	18
Cobourg			1	2	***************************************		1	1	-		7	11
Cooksville		-		1	-		_	2	-	-		43
Elmira		-	1	1		_	1	1	-		5	5
Erin				î			1	1				11
Fort William	_	1	2	3		1	2	3		19	68	82
Galt		1	1	1		1	1	1		18	19	22
Georgetown		1	1	1		1	1	1		10	11	13
	1	1	1	1	0		2	_	20	31	31	57
	_		_	-	2	2		3	30			
Hamilton & Dundas	2	4	4	5	2	6	11	14	10	97	215	306
Ingersoll	1	1	1	1	1	1	1	1	8	9	8	8
Kenora				1			-	1				19
Kitchener	1	1	1	1	2	2	2	2	36	37	37	39
London	1	1	1	2	1	1	1	4	27	35	34	46
Markham	1	1	1	1	1	1	1	1	8	8	8	8
Milton				1				1				10
Mitchell				1				1				2
Newmarket	1	1	1	1	1	1	2	1	8	8	46	48
Niagara Falls		-		1			-	4				77
Oakville			1	2		_	1	3			23	47
Orillia		-	2	2			2	2			48	40
Oshawa	3	3	3	3	5	5	5	5	95	95	92	92
Ottawa	1	1	2	3	1	1	4	13	26	24	103	299
Pembroke		î	1	2		1	1	2		11	11	32
Port Hope		î	1	1		1	1	1		17	16	15
Simcoe				2		1	1	2			10	72
Smiths Falls	1	2	2	2	1	2	2	2	4	12	12	14
St. Catharines	1	1	2	2		2					66	74
Toronto	12	15	18	17	2		3	3	43	41		
	14	13			39	110	136	128		2169	2717	2874
		1	1	2			1	5		4.5	35	89
Whitby	1	1	1	1	1	1	1	1	16	15	16	16
Woodbridge		1	1	1		1	1	1		18	19	26
Woodstock	1	1	1	_1	1	1	1	1	9	8	8	9
Total Fluid	32	44	56	79	65	147	190	228	1365	2787	3752	4769

Concentrated Plants	Number of Concentrated Plants		Number of Bulk Transports		Number of Bulk Producers							
	1957	1958	1959	1960	1957	1958	1959	1960	1957	1958	1959	1960
Stacey, Mitchell	_		1	1			1	1			30	48
Kraft, Williamstown	-		-	1				1		-	_	15
Canada Dairies,												
Burgessville	-			1		-		1				9
Total Concentrated	_	_	1	3			1	3			30	72

BULK MILK COURSES - DAIRY DEPARTMENT, O.A.C.

Courses of instruction for the operators of Bulk Tank trucks, transporting milk from the farm to the milk plant, which commenced in 1955 were continued and are herein reported.

The Dairy Department of the Ontario Agricultural College has conducted these courses giving instruction on the grading, sampling and testing of milk for butterfat and for bacterial activity.

Date of Course	Students Registered
1955 — April 12 to 19	18
October 5 to 14	11
1956 — April 18 to 27	23
October 1 to 10	23
1957 — April 22 to May 1	39
October 15 to 24	46
1958 — April 15 to 25	35
April 29 to May 9	31
September 9 to 19	43
1959 — April 20 to 30	36
October 8 to 21	41

LICENCES ISSUED								
Year	Regular Distributor	Producer Distributor	Peddler	Milk Transporter	Milk Manufacturer	Distributor Shop-keeper	Total	
1936	647	861	87	177	28		1,800	
1937	750	924	87	205	32		1,998	
1938	598	850	90	220	36		1,794	
1943	610	452	125	181	43		1,411	
1948	630	192	86	272	53		1,233	
1953	558	84	99	247	43		1,031	
1956	532	65	54	251		1	903	
1959	484	48	46			1	579	

PRODUCER PRICES		
Market	Producer Price	Agreement or Award
Acton	5.00 4.81	54-32 60-5FM
Aisla Craig	P.	D. A59-4FM
Alfred	4.05 4.00	
Alliston *Almonte **	5.07 4.15	56-2
**Alvinston	4.75 5.69	60-19FM 60-3FM
Ansonville Arnprior	5.00	54-28 58-29FM
Arthur	4.81	30-231 IVI

	Producer	Agreement
Market	Price	or Award
Athens	4.24	A60-1FM
Aurora	4.97	57-48F
Aylmer	4.62	A60-2FM
Bancroft	4.62 5.00	59-28 FM 54-28
Barrie	4.62	59-29 FM
Barry's Bay	5.15	A54-3
Beamsville Beeton	4.13	58-2FM
*Belleville	4.93	57-10
**Blenheim	4.77	57-32
Blind River	5.88	58-31FM
Bloomfield	4.67	57-31
Blyth	4.81	A59-1
**Bobcaygeon	3.90 —	4.10
Bolton	4.88	57-23
Bowmanville	5.00	54-28
Bracebridge	5.10	54-28
Brampton	5.00	54-28
Brantford	5.00	A54-2
Brigden	5.10	59-1FM
Brighton	4.74	58-1F 54-28
Brockville	5.00 4.81	A59-1
Brussels	4.81	59-9FM
Burks Falls	5.00	58-14FM
Caledonia	5.12	58-6FM
Campbellford	4.81	58-10FM
Capreol	5.57	58-19FM
*Cardinal	4.00	
**Carleton Place	4.15	
Casselman	P.	.D.
Chalk River	5.10	
Chapleau	6.31	58-30FM
Chatham	5.15	A54-5
Charter Walley	4.62	59-17 FM
Cherry Valley Chesley	4.67 4.81	57-31 A 57-3
Chesterville	4.09	59-21 FM
Clifford	4.62	59-15FM
Clinton	4.81	A59-1
Cobourg	5.00	54-28
Cochrane	5.74	58-9FM
Colborne	4.74	58-1 F
Collingwood	5.00	54-35
Comber	4.78	
Cooksville	5.10	54-41
Copper Cliff	5.76	59-35FM
Cornwall	5.00	54-28
Cumberland Delhi	3.75	CO 7777.5
Drayton	4.74	60-7FM
Dresden	4.62 5.15	59-15FM A54-5
Dryden	5.40	59-32FM
Dundalk	4.81	59-16FM
Dundas	5.15	57-33
Dunnville	4.96	59-27 FM
Durham	4.81	58-27FM
Eganville	4.79	59-18FM
Elk Lake	5.62	59-6 FM
Elmira	4.82	60-6FM

26.1	Producer	Agreement
Market	Price	or Award
Elora	4.81	59-2FM
Englehart	5.62	59-6FM
Erin	4.81	A58-5FM
Espanola	5.88 (90)	%) 59-11FM
Essex	5.15	A54-6
Exeter	4.81	A59-1
Fenelon Falls		4.07
Fergus	4.82	59-8FM
Fort Erie	5.03	59-5FM
**Fort Frances	5.20	54-1
Fort William	5.50	A60-3FM
Frankford	4.62	59-19FM
Garangua	5.00	54-28
Gananoque* *Georgetown	5.00 5.00	57-3 54-28
**Geraldton-Beardmore	5.80	53-45
Glencoe	4.81	58-38FM
Goderich	4.81	A59-1
Gore Bay		D.
Gravenhurst	5.10	54-28
Grimsby	5.15	57-33
Guelph	5.00	54-28
Hagersville	4.69	59-13FM
Haileybury	5.62	59-6FM
Haliburton	4.96	59-3FM
Hamilton	5.15	57-33
Hanover	P	D.
Harriston	4.62	59-15FM
Hastings	4.62	58-23FM
Havelock	4.62	58-23FM
Hawkesbury	4.77	58-20FM
Hearst (Co-Operative)	4.04	4 50 4
Hensall	4.81	A59-1
Hespeler	5.00	54-28
Hornepayne (Not buying from Producers)	E 10	E4 00
Huntsville	5.10 5.00	54-28 A 58-2FM
Ingersoll	5.69	60-3FM
Iroquois Falls *Kapuskasing	5.74	56-19FM
**Kemptville	4.09	57-41FM
Kenora	5.10	59-33FM
Kincardine	4.81	A57-3
Kingston	5.00	54-28
Kingsville	5.15	A54-7
Kirkland Lake	5.62	59-6FM
Kitchener	5.00	54-28
Lakefield	4.81	59-25FM
Lanark	3.88	
Lancaster	4.05	59-30FM
LaSalle	5.15	54-6
Leamington	5.15	A54-8
Levack	5.76	59-35FM
Lindsay	5.00	54-28
Lion's Head	4.81 4.81	A57-3 A59-2
Listowel	5.07	58-3F
Little Current	5.00	57-47F
London L'Original	4.73	37-171
Lucan	4.50	
Lucknow	4.81	A57-3
LIUCALUW		

	Producer	Agreement
Market	Price	or Award
Madoc	4.62	59-19FM
Markdale	4.77	59-12FM
Markham	4.81	58-25FM
Marmora	4.62	59-19FM
Massey	5.88	59-11FM 57-42F
Matheson	5.62 5.19	59-4FM
Mattawa Maxville		P.D.
Meaford	5.00	57-27
Merrickville	3.98	0. 4.
Midland	4.81	69-4FM
Milford Bay	5.10	58-5FM
Millbrook	4.81	58-32FM
Milton	5.00	54-28
Milverton	4.34	
Mitchell	4.81	A59-3FM
Morrisburg	4.19	59-23 FM
Mount Forest	4.45	= 7 7
Napanee	5.00	57-7 P.D.
New Hamburg	4.50	.D.
New Liskeard	5.62	59-6FM
Newmarket	5.00	54-37
Niagara Falls	5.15	A54-3
Niagara-on-the-Lake	5.15	A54-3
Nipigon	5.69	57-34
Noelville (Not buying from Producers)		
North Bay	5.38	A57-4
Norwich	4.69	58-33 FM
Norwood	4.62	58-23 FM
Oakville	5.15	54-28
Oil Springs Orangeville	4.60	AE7 CT
Orillia	4.81 4.95	A57-6F 54-28
Orono	4.24	J4-40
Oshawa	5.00	55-6
Ottawa	5.15	A57-1
Owen Sound	5.00	54-30
Paisley	4.81	A57-3
Pakenham	P	.D.
Palmerston	4.62	59-15 FM
Parham	4.24	59-20FM
Paris Parry Sound	5.00	54-28
Pembroke	5.10	A58-3FM
Penetang	5.10 4.81	54-28 60-4 FM
Perth	4.43	00-4FM
Peterborough	5.00	54-28
Petrolia	5.10	54-28
Picton	4.67	57-31
Plantagenet	4.00	
Port Arthur	5.50	A60-3FM
Port Colborne	5.15	A54-3
Port Dalhousie	5.15	A54-3
Port Plain	4.62	
Port Elgin Port Hope	4.81	A57-3
Port McNicoll	5.00	54-28
Port Perry	4.81 4.81 (90	60-4FM %) 58-37FM
Powassan	5.10	58-14FM
	0.10	30-171 1/1

	Producer	Agreement
Market	Price	or Award
Prescott	4.68	
Preston	5.00	54-28
Rainy River	4.99	58-17FM
Renfrew	5.00	54-28
Richmond	5.15	58-18FM
Ridgetown	5.15	A54-5
Ridgeway	5.03 4.81	59-5FM
Rockland	3.80	A57-3
Rockwood	4.60	
Russell	4.69	
St. Catharines	5.15	A54-3
St. George	5.00	59-14FM
St. Jacobs	4.79	58-24FM
St. Marys	5.00	54-28
St. Thomas	4.62	
Sarnia	5.10	54-28
Sault Ste. Marie	5.88	A57-5F
Scotland		P.D.
Selkirk	4.01	P.D.
Simcoe	4.81 5.40	CO 1EM
Sioux Lookout Smiths Falls	4.81	60-1FM A58-1F
Smithville	4.89	AJ0-11
Southampton	4.81	A57-3
South River	5.10	58-14FM
Stayner	5.00	54-35
Stirling	4.62	59-19FM
Stoney Creek	5.15	57-33
Stouffville	4.81	58-25FM
Stratford	5.00	54-28
Strathroy	5.00	56-9
Sturgeon Falls	5.38	EO 05733.5
Sudbury	5.76	59-35FM
Sundridge	5.10 5.00	58-14FM 58-28FM
Sutton West	4.24	59-20FM
Tavistock	3.80	J3-201 W
Teeswater	4.81	A57-3
Thamesville	4.86	58-34FM
Thedford (Not buying from Producers)		
Thessalon	5.88	A57-5F
Thornbury	4.81	58-39FM
Thorold	5.15	A54-3
Tilbury	4.96	
Tillsonburg	4.62	PM 04
Timmins	5.84	57-21
Tobermory	4.81 5.10	A57-3 54-41
Toronto	4.93	58-13FM
Trenton	4.62	59-19FM
Uxbridge		(90%) 58-35FM
Vankleek Hill	4.77	58-22FM
Verner	5.38	57-38F
Victoria Harbour	4.81	60-4FM
Wallaceburg	5.15	A54-5
Waterdown	5.15	57-33
Watford		P.D.
Welland	5.15	A54-3
Wellington	4.67	57-31

Market	Producer Price	Agreement or Award
*Westport	4.24	60-4FM
**Wheatley	5.15	56-12
Whitby	5.00	54-40
Wiarton	4.81	A57-3
Winchester	3.69	59-22 FM
Widermere	5.10	58-15FM
Windsor	5.15	A54-9
Wingham	4.81	A59-1
Woodbridge	4.99	57-23
Woodstock	5.00	A58-2FM
Zurich	4.81	A59-1

Head Office Fieldmen

Two Fieldmen work out of Head Office supervising the work of local Fieldmen and, in addition, doing audit work which includes investigating the records of fluid milk distributors to see that producer prices, provided for in collective bargaining agreements filed with the Board, are paid. Special investigations are also conducted to gather information on Industry matters, required by the Board. Producer and Distributor Association Officials are interviewed relative to local market problems.

Statistical data on the work performed for the fiscal year ending March 31, 1960, is as follows:

Payment Audits:	
Routine and Follow-up	443
Special Audits	37
Errors Corrected:	
Number	41
Value	\$43,039.10
Investigations	54
Special Plant Calls	147
Miscellaneous Calls:	
Farm	52
Producer Association	38
Distributor Association	6
Other Calls	138
Office Calls	202
Meetings with Fieldmen	112
Special Reports	75
Mileage Travelled	28,771

Bonding of Distributors

The regulations provide that distributors shall furnish security, in the form of Government or Surety bonds, for the protection of milk producers. During the fiscal year ending March 31, 1960, an amount of \$4,701,974 in the form of Government and Surety bonds was on deposit with the Board.

A call was made on the \$1,500.00 bond deposited by one distributor who was in arrears in payments to his producers at the time of the sale of his business.

MILK PRODUCTS DIVISION

This division supervises the production of milk and cream used for the manufacture of milk products other than fluid milk products, including the three dairy producer marketing plans. The milk and cream quality and farm service extension program is supervised by the Associate Director of Dairying and is reported under that section.

The Dairy Producers' Marketing Plans

Three marketing plans operate under The Milk Industry Act, 1957, namely The Ontario Cheese Producers' Marketing Plan, The Ontario Concentrated Milk Producers' Marketing-for-processing Plan, and The Ontario Cream Producers' Marketing-for-processing Plan. The general activities of the respective local boards operating under these plans are as follows:

The Ontario Cheese Producers' Marketing Plan

The Ontario Cheese Producers' Marketing Board functions under this plan. The local board consists of seven members. One member is appointed from each of six districts in the Province for a three year term, so arranged that two districts elect their members each year. The seventh member is appointed at large by the six elected members. Since June 26th, 1958, The Ontario Cheese Producers' Cooperative Limited have held a licence as a buyer of cheese and the regulations were changed at that time to permit this procedure. The Ontario Cheese Producers' Cooperative Limited purchases cheese on the Kingston and Stratford cheese exchanges the same as any other licensed cheese buyer. During the 1959 season the Ontario Cheese Producers' Cooperative Limited purchased approximately 12 million pounds of cheese for export to the United Kingdom.

On April 23, 1959, there was announced a reduction in the support price of Ontario cheese from 34 cents to 32 cents f.o.b. an approved warehouse. In addition, cheese producers received a payment of 25 cents per 100 pounds of milk delivered for manufacture, with the exception that no payment would be made to producers who sold a portion of their milk in the fluid bottled milk market. Because of the reduction of two cents, the old 34 cent agreement of May 21st, 1958 had to be revoked. A negotiating meeting was held in the Quinte Hotel, Belleville, on May 12th, 1959 and an agreement was signed by both parties for a minimum negotiated price of 32 cents per pound f.o.b. an approved warehouse. The Ontario Cheese Producers' Co-operative continued to support the price of cheese at one cent above the negotiated price or 33 cents f.o.b. an approved warehouse, and this support continued throughout the season until the exchange of December 30th, when the minimum support price was reduced to 32 cents on the request of the Chairman of the Agricultural Stabilization Board.

Early in 1959 The Ontario Cheese Producers' Marketing Board sold the balance of the 1957 inventory, which had been purchased through financing obtained in part from the Federal Government and by bank loans guaranteed by the Ontario Government. The Marketing Board held no 1958 cheese and consequently started the new production season with no inventory.

The Ontario Cheese Producers' Marketing Board made a forward sale of cheese to the United Kingdom on May 8th, 1959, at 33 cents f.a.s. Montreal. Because of the keen United Kingdom market, it was difficult for the Board to fill all the inquiries but they were successful in meeting their commitments.

At March 31, 1960, The Ontario Cheese Producers' Marketing Board have no cheese in inventory. At this date, the Agricultural Stabilization Board held less than a million pounds of cheddar cheese.

Number of licenses as buyers of cheese issued were 52 in 1958 and 30 in 1959.

The Ontario Concentrated Milk Producers' Marketing-for-processing Plan

The Ontario Concentrated Milk Producers' Marketing Board operates under this plan as the local board. Two negotiating committees are set up for negotiating minimum prices for milk for manufacture into concentrated milk products—one for case goods and one for other than case goods.

Three meetings of the negotiating committees brought about agreements between producers and processors and one award was handed down by Judge MacLaren on July 20th, 1959.

In addition to the negotiated price and the award price, producers shipping to a concentrated plant received 25 cents per cwt. federal subsidy.

Agreement or Award number	Agreement 59/1 MP	Award 59/1 MP	Agreement 59/4 MP	
Filing Date	May 7th, '59	July 20th, '59		er 30th, '59 (after Feb. 29)
For the manufacture of				
(a) butter and roller powder	\$2.40	\$2.40	\$2.50	\$2.40
(b) butter and spray powder	2.45	2.45	2.55	2.40
(c) spray whole milk powder				
for domestic sale	2.67	2.74	2.84	2.74
(d) roller whole milk powder				
for domestic sale	2.57	2.65	2.75	2.65
(e) butter and skim milk into caseir		2.45	2.55	2.45
	1 4.55	4.43	4.33	4.43
(f) skim milk into casein &	0.45	0.55	0.05	0.55
fat for other use		2.55	2.65	2.55
(g) milk powder export	2.57	2.50	2.60	2.50
(h) all other milk products				
other than case goods	2.55	2.63	2.73	2.63
(i) condensed milk and				
evaporated milk in cases	2.71	2.73	2.83	2.73
(j) condensed milk and evaporated		4.10	2.00	2.70
107				
milk in cases, other than for		0.00		
domestic consumption	2.51	2.50	2.60	2.50

Clauses a, b, e, and h were subject to the butter escalator clause whereby the minimum price increased or decreased at the rate of 4.2 cents per hundred pounds of milk as the price of butter in Toronto increased from 60 cents per pound. Accordingly the following half monthly changes were based on the escalator clause made on the minimum prices in the clauses affected in the above.

1958										
April	1 - 30	 13¢	increase	on	average	non-tenderable	butter	price	of	63.10¢
May		11¢	33	23	"	22	22	33	"	62.68¢
23	16 - 31	 12¢	33	23	11	99	22	"	9.9	62.75¢
June		 12¢	99	2.2	9.9	23	33	23	99	62.85¢
July	1 - 31	12¢	33	99	99	23	23	22	22	62.86¢
Aug.		12¢	22	9.9	23	99	22	99	23	62.87¢
Sept.		 12¢	29	"	99	52	,,	23	22	62.90¢
23		13¢	23	33	22	22	22	22	22	63.01¢
Oct.	1 - 15	13¢	23	22	**	23	99	99	99	63.07¢
22	16 - 31	14¢	99	99	22	"	23	"	23	63.31¢
Nov.	1 - 15	15¢	22	9 9	33	**	22	99	22	63.55¢
23	16 - 30	 16¢	22	99	22	99	29	99	99	63.9 ¢
Dec.	1 - 15	 16¢	23	22	22	23	22	22	22	63.9 ¢
99	16 - 31	 17¢	29	23	22	99	"	"	,,	64.0 ¢
1959		,								01.0 γ
Jan.	1 - 31	 17¢	increase	on	average	non-tenderable	butter	price	of	640 ¢
Feb.	1 - 29	 17¢	99	33	"	"	22	"	"	64.0 ¢
March	1 - 31	 17¢	99	23	23	22	23	22	"	64.0 ¢
April	1 - 15	16¢	59	"	22	22	22	"	"	63.8 ¢
33	16 - 30	13¢	22	,,	>>	22	33	33	23	63.09¢
May	1 - 15	 15¢	23	33	23	22	22	23	23	63.67¢
23	16 - 31	 16¢	99	99	"	99	29	59	33	63.81¢
June	1 - 15	15¢	22	"	33	22	33	22	23	63.48¢
22	16 - 30	 12¢	99	"	23	23	22	22	,,	62.88¢
July	1 - 31	12¢	"	"	22	23	33	57	,,	62.88¢
Aug.	1 - 31	 12¢	99	23	23	93	"	23	23	62.88¢
										υ2.00φ

1 - 15		10¢	99	27	23	22	23	27	99	62.39¢
16 - 30		13¢	22	22	99	22	23			63.11¢
1 - 15		13¢	>>	33	23	59	33	99	"	63.13¢
			23	22	99	>>	33			63.13¢
1 - 15		15ϕ	22	23	23	22	93	22		63.51¢
16 - 30		16ϕ	"	33	99	,,	29	99	53	63.92¢
1 - 30		17¢	23	"	22	23	23	23	"	64.0 ¢
										, , ,
1 - 31		17¢	increase	on	average	non-tenderable	butter	price	of	64.0 €
1 - 29		17ϕ	23	2.3	"	9.9	33	22		
1 - 31		17ϕ	22	23	23	33	33	22	99	64.0 ¢
	16 - 30 1 - 15 16 - 30 1 - 15 16 - 30 1 - 30 1 - 31 1 - 29	16 - 30 1 - 15 16 - 30 1 - 15 16 - 30 1 - 30 1 - 30 1 - 31 1 - 29	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$				

With support price of butter at 64ϕ since May 1957, the escalator clause has been beneficial to milk prices. Powder prices have declined substantially, however, as support prices were lowered and stocks increased. Powder support prices for 1957 were 17ϕ for spray and 14ϕ for roller. In May 1958, these were lowered to 15ϕ and 12ϕ respectively. In May 1959, these prices were further reduced to 10ϕ and 3ϕ and in September 1959 all support was withdrawn. During March 1960, sales of powder were reported as low as 3ϕ .

During 1959 a local agreement for charges for transportation of milk for processing was made at Aylmer but none were made during 1958.

The Ontario Cream Producers' Marketing-for-processing Plan

The Ontario Cream Producers' Marketing Board operates under this plan as the local board. While a negotiating committee is set up to negotiate minimum prices for cream for processing into butter, it has not yet filled an agreement, although for the past three years has unofficially agreed to a minimum price for first grade fat picked up at the farm at the same price as that set for the floor price on butter.

The 3/10¢ license fee collected by the group is, largely utilized for advertising purposes and to compensate the continuing trend of cream producers diverting to milk shipping, thus lowering the revenue of the board.

Plant Licenses

All plants manufacturing milk products which are not designated as fluid milk products require a license to operate under The Milk Industry Act, 1957. O. Reg. 88/58 require also that such plants, in addition to meeting all other requirements of the regulations, must satisfy the Board as to their financial responsibility in making payments to producers for milk and cream which they purchased.

All plants which have been issued their license in 1959 have satisfied the Board as to their financial responsibility.

Plant Licenses Issued		
	1958	1959
Creameries only	136	133
Cheese Factories only	170	153
Processing Plants only	85	86
Milk Receiving Stations only	19	22
Cream Receiving Stations only	5	5
Combined Creameries & Cheese Factories	8	4
Combined Creameries & Milk Separating plants	4	2
Combined Creameries & Processing Plants	39	35
Combined Creameries & Milk Receiving Station	1	_
Combined Cheese Factory & Processing plant	3	4
Combined Cheese Factory, Creamery & Processing plant	7	6

Combined Cheese Factory & Milk Receiving Station		3
Combined Cheese Factory & Cream Receiving Station	1	1
Combined Cheese Factory, Cream Receiving Station and Processing Plant	1	1
	-	_
Combined Cheese Factory,		
Processing, Milk Separating, and Milk Receiving Station		1
Combined Processing & Milk Receiving Station	-	1
Combined Cheese Factory,		
Cream Receiving Station and Milk Receiving Station		1
Combined Cheese Factory and Milk Separating Station		1
Combined Cream Receiving Station and Processing plant	2	4
Combined Cream Receiving Station,		
Milk Receiving and Milk Separating plant	-	1
	1	
Combined Cream Receiving Station and Milk Separating	1	
	482	464

Production of Milk Products in Ontario

Total milk production in Ontario increased slightly over that of 1958. Production of skim milk powder declined approximately $4\frac{1}{2}\%$ due to lower prices. Creamery butter volume was also lower by 2.7%.

Cheese production, due to extremely favourable prices increased 9% over that of 1958. Ice Cream production was substantially increased by about 15% and evaporated milk and whole milk powder production gained 7% and 17% respectively. Production of other products was similar to that of 1958, with one new product "Multi Milk" being placed on the Ontario Market for the first time.

Production Statistics

	1958		1959	
Creamery butter	89,488,000	lbs.	87,110,000	lbs.
Cheddar cheese	61,950,000	lbs.	68,559,000	lbs.
Other cheese (not including cottage)	6,598,000	lbs.	6,605,000	lbs.
Cottage cheese (including creamed)	8,330,000		9,037,000	
Ice Cream	13,618,000		15,316,000	
Concentrated Milk Products				
	1958		1959	
Condensed Whole Milk	13,315,000	lbs.	13,228,000	lbs.
Evaporated Whole Milk	97,989,000	lbs.	105,595,000	lbs.
Powdered Whole Milk	17,498,000	lbs.	20,408,000	lbs.
Condensed Skim Milk	2,771,000	lbs.	2,683,000	lbs.
Dry Skim Milk (Spray Process)	61,409,000	lbs.	61,785,000	lbs.
Dry Skim Milk (Roller Process)	16,029,000	lbs.	12,324,000	lbs.
Dry Buttermilk	3,760,000	lbs.	3,310,000	lbs.
Miscellaneous Whole Milk By-products (including				
malted milk, partly-skimmed, evaporated milk,				
etc.)	16,333,000	lbs.	18,099,000	lbs.
Miscellaneous By-products (including evaporated				
skim milk, lactose, casein, etc.)	18,425,000	lbs.	15,118,000	lbs.

Of the total production in Canada, Ontario produced 64% of the cheese compared with 69.4% in 1958; 26.6% of the creamery butter compared with 26.8% in 1958; 43.3% of the concentrated milk products compared with 41.4% in 1958 and 38.2% of the ice cream compared with 37.6% in 1958.

Some 6,199,000,000 lbs. of milk were produced in Ontario in 1959 compared with 6 billion pounds in 1958.

Ontario produced 29.35% of the total Canadian milk production as compared with 30.01% in 1958.

The approximate farm value of the milk used for manufacture, distribution or farm use is as follows:

	1958	1959
Creamery Butter	\$ 46,884,000	\$ 49,951,000
Factory Cheese	17,182,000	21,579,000
Other Cheese (Whole Milk)	1,819,000	2,227,000
Cottage Cheese (Creamed)	141,000	161,000
Ice Cream	5,771,000	6,082,000
Concentrated Whole Milk Products	11,345,000	12,904,000
Fluid Sales	88,251,000	91,859,000
Farm Consumed, etc	17,066,000	19,988,000
Total Farm Value	\$188,459,000	\$204,751,000

Approximately 92.37% of the total milk production in Ontario is received at the plants.

Milk (including cream converted to milk) received at plants was utilized as follows:

	1958	1959
Creamery Butter	37.7%	35.7%
Cheddar Cheese	12.3%	13.2%
Other Cheese (Whole Milk)	1.3%	1.2%
Fluid Milk	31.2%	31.3%
Fluid Cream	5.6%	5.7%
Condensed Whole Milk	0.6%	0.5%
Evaporated Whole Milk	4.1%	4.2%
Dry Whole Milk (Including malted baby food)	3.0%	3.1%
Ice Cream	4.2%	4.6%

Approximately 44.94% of the milk fat used for the manufacture of creamery butter goes into the plants in the form of milk. This is approximately the same for 1958.

Statistical Summary of Plants Manufacturing Milk Products, Including Milk and Cream Receiving Stations

	1958	1959
Total plants operating	478	472
Creameries (making creamery butter)	196	183
Cheese Factories	189	177
Processing Plants	127	131
Cream Receiving Stations	12	15
Milk Receiving Stations	20	28
Milk Separating Stations	27	6
Approx. lbs. of butter made from milk to plants	40,056,000	39,040,000
Making cheddar cheese	181	165
Making other types	25	29
Making cottage cheese	100	98
Separating whey	164	161
Plants making whey butter	62	73
Plants making dry milk	35	33
Plants making evaporated or condensed milk	9	15
Plants making ice cream and ice cream mix	95	98
Plants making casein	3	4
Plants making miscellaneous products	16	21

Number of Cream Producers	36,656	38,098
Number of Milk Producers (Cheese)	8,857	10,127
Number of Milk Producers (Concentrated)	19,725	17,865
% Cream Self-delivered	36.4	36.59
Average per cent fat in cream from producers	33.6	34.03
Average per cent fat in milk (cheese)	3.35	3.16
Average per cent fat in milk (concentrated)	3.51	3.47
Average pounds milk to make a pound of cheese	11.18	10.68
Average price first grade cream (milk fat at farm)	63.94¢	64.12¢
Average price 100 lbs. milk (cheese) at farm	\$2.60	\$2.86
Average price 100 lbs. milk (concentrated) at farm	\$2.70	\$2.77
Canada Quality Premium per pound Cheese	0.942c	0.871¢
Average price first grade butter (solids)	62.45c	63.15¢
Average price cheddar cheese per pound	34.62¢	36.56¢
Average price evaporated milk per pound case goods	13.12¢	13.00¢
Average price dry skim milk per pound (spray process)	15.88¢	12.30¢
Average price dry skim milk per pound (roller process)	13.01¢	9.97¢
Average price dry skim milk per pound (animal feed)	7.82c	8.47c
Average price dry whey per pound	5.58c	6.15c
Average price dry buttermilk per pound	7.25¢	8.03¢
Average price casein per pound	25.13¢	25.54¢
Average price sweet cream per pound milk fat	84.12¢	84.34¢

Certificates for Buttermakers and Cheesemakers

All plants making butter and cheese in Ontario are required to have a person holding a certificate as a buttermaker in charge of their buttermaking operations and a person holding a certificate as a cheesemaker in charge of their cheesemaking operations.

Buttermakers' Certificates Issued

	First Class	Second Class	Temporary	Beginner	Total
1958	167	8		23	198
1959	172	7		9	188

Cheesemakers' Certificates Issued

	Variety	First Class	Second Class	Temporary	Beginner	Total
1958	8	120	38	12	15	193
1959	11	108	43	11	11	184

Quality of Milk Products

Federal grading standards are set up by regulation for butter, cheese and skim milk powder and the biggest percentage of these three products is graded.

Federal Grading of Ontario Butter

	Total Pounds	% First	% Second	% Third	% Below Third	% Scoring 93
	Graded	Grade	Grade	Grade	Grade	Points or Higher
1958	67,672,472	97.45	2.33	0.15	0.07	26.27
1959	65,570,176	96.16	3.55	0.24	0.05	28.36

This is the second year in a row that there has been a decrease in the over-all production of first grade quality and there was a definite decrease in the quantity of high scoring butter manufactured. Unfortunately there were many consumer complaints on the quality of butter being sold at the retail level during the year. 75.49% of Ontario butter was graded in 1959 compared with 74.99% in 1958.

Federal Grading of Ontario Cheese

	No. Boxes	% First	% Second	% Third	% Below Third
	Graded	Grade	Grade	Grade	Grade
Eastern Ontario	480,737	90.87	8.95	0.16	0.02
Central Ontario	155,859	93.80	6.08	0.12	
Western Ontario	85,613	93.20	6.75	0.05	direction of the latest and the late
Northern Ontario	2,215	87.67	12.33		- Control
Totals — 1959	724,424	91.76	8.08	0.14	0.02
Totals — 1958	673,197	92.69	6.87	0.41	0.03

As the federal government, under The Cheese and Cheese Factory Improvement Act, pays a quality premium on high scoring cheese at the rate of 1¢ per pound for 93 score and 2¢ per pound for 94 score and higher, the following gives these quality scoring summaries for Ontario cheese in 1958 and 1959.

	% 94 Score	% 93	% 92	% Below 92 Score
	and higher	Score	Score	(Under First Grade)
1958	25.55	43.12	24.02	7.31
1959	21.76	40.25	29.75	8.23

95.88% of all cheddar cheese manufactured in Ontario was graded.

It is noted that there is a decline in the quantity of both 94 Score and 93 Score cheese and also a decline in the quantity of First Grade cheese. Unfortunately most of the decline in quality has been due to workmanship techniques. Many of these are due to the introduction of new methods in an endeavour to streamline the manufacturing methods to reduce manufacturing costs. Towards the end of the season many of these defects had been corrected although there were some factories still having problems.

Federal Grading of Edible Dry Skim Milk In Ontario

	Total Pounds	% First	% Second	% Below Second
	Graded	Grade	Grade	Grade
1958	56,340,100	89.4	6.7	3.9
1959	42,688,700	90.7	5.0	4.3

There was an increase of 1.3% in First Grade powder in 1959 from 1958. 55.13% of the edible dry skim milk was graded in 1959 as compared to 66.5% in 1958. Competition by plants for milk for the manufacture of skim milk powder is perhaps the main contributing factor for the 9.3% of under grade powder graded in that there is insufficient attention being given to the quality of the milk coming into these plants. The fact that there is a decline of over 11% in the amount of skim milk powder graded during the year is a further indication that the quality is not as it should be.

Butter Quality Improvement Competitions and Exhibition Butter

While 1959 was the 15th consecutive year that these competitions were held, the results were the most discouraging since they were started. Only 68 creameries participated. This is the lowest on record. There was a decline in the quality of the butter manufactured by the creameries in the competition and was the poorest quality since 1954. However, the creameries in the competition made 96.7% First Grade butter compared with 93.33% First Grade butter manufactured by creameries not in the competition. All creameries in the province manufactured 96.% First Grade butter during the competition period. These competitions are sponsored by The Ontario Creamerymen's Association, The Ontario Cream Producers' Marketing Board, The Ontario Concentrated Milk Producers' Marketing Board and the dairy equipment and supply companies in the province.

The competitions are supervised by the Milk Products Division of the Dairy Branch in co-operation with the Department of Dairy Science, Ontario Agricultural College, and the Dairy Division, Production and Marketing Branch, Canada Department of Agriculture.

The Grand and Reserve Champions in each of the competitions in 1959 were:

1. QUALITY

The Borden Company Limited, Kemptville Canada Packers Limited, Fort Frances

2. Yeast and Mould

Villa Nova Milk Products Ltd., Waterford Canada Packers Limited, Harriston

3. Workmanship

Canada Packers Limited, Harriston

United Dairy and Poultry Co-operative, Wingham.

4. COMBINED QUALITY, YEAST AND MOULD, AND WORKMANSHIP Villa Nova Milk Products Limited, Waterford Canada Packers Limited, Harriston

5. Creameries Making the Most Overall Improvement Briar's Dairy Limited, Lorneville (sole winner)

6. Novice Competition (Not Previously a Winner)
Pembroke Creamery, Pembroke

Dunnville Dairy, Dunnville

7. HIGHEST SCORING BUTTER (Cream Receiving Creameries)
Canada Packers Limited, Fort Frances
Campbell's Dairy Products Ltd., Peterborough

8. Highest Scoring Butter (Milk Receiving Creameries)
The Borden Company Limited, Kemptville

Ault Milk Products Limited, Winchester
9. Greatest Increase in High Scoring Butter (Milk Receiving Creameries)

U.D.P.C. (Land O'Lanark Branch) Perth

Clark Dairy Limited, Ottawa

10. Greatest Increase in High Scoring (Cream Receiving Creameries)

Earlton Creamery, Earlton Silverwood Dairies Limited, Lindsay

EXHIBITION BUTTER (Creameries Winning Most Prizes at the C.N.E. and the Royal)
 Briar's Dairy Limited, Sutton West
 Villa Nova Milk Products Ltd., Waterford.

Once again Ontario creameries do not appear to be interested in exhibition butter. Only four competed at the C.N.E. and the Royal in 1959. The other competition for butter was sponsored by the Dairymen's Association of Western Ontario and was held at Hamilton in January, where entries were up substantially from 1958.

Cheese Competitions and Exhibitions

Major competitive cheese exhibitions were held by the C.N.E., Royal Winter Fair, Ottawa Winter Fair, British Empire Cheese Show, Belleville, and The Dairymen's Association of Western Ontario.

Ontario cheesemakers again captured top honours at these exhibitions. In addition, Ontario cheesemakers captured top honours in the open classes at the Olympia Dairy Show, London, England, and the Scottish Dairy Show, Glasgow, Scotland.

The major trophy winners in the provincial cheese competitions in 1959 were:

1. The Garnet Bain Memorial Trophy awarded to the Cheesemakers' Association whose members made the highest percentage of extraneous matter free cheese:

Western Ontario Cheesemakers' Association.

2. Frank Herns Memorial Trophy awarded to the cheesemaker winning the most and highest prizes at the major cheese exhibitions:

H. Montgomery, Farmers' Joy Cheese Factory, Monkland, Ontario.

3. G. G. Publow Memorial Trophy awarded to the cheesemaker with the highest rating for plant sanitation and operation:

Roy Greenhorn, Oak Leaf Cheese Factory, Athens, Ontario.

- 4. J. P. Griffin Memorial Shield awarded to the Cheesemaker's Association making the highest percentage of First Grade Cheese:

 Central Ontario Cheesemakers' Association.
- 5. John H. Ecklin Memorial Trophy awarded to the cheesemaker making the highest scoring cheese in Central or Eastern Ontario:

J. J. McDonald, Glencoe Cheese Factory, Monkland, Ontario.

General

Plants manufacturing milk products have continued to show improvement in equipment and construction. There is still a trend towards consolidation into larger plants. New and modern plants are being constructed to replace old buildings and several are in the process of being remodelled.

The smaller plant is experiencing difficulty in competing under present day conditions. This is particularly true with the small cream receiving creameries.

Indications pointed to an extreme scarcity of rennet for cheesemaking early in the winter. Prices were increasing sharply. This could develop into a very serious problem.

The cheese industry is still experiencing a great deal of difficulty in obtaining qualified help. The cheesemakers coming from Europe are more experienced in foreign type cheese manufacture and as a result, there is an increased quantity of this type of cheese being manufactured. This cheese is finding a ready market in Canada.

Cheese prices in 1959 reached an all time high of $43\frac{1}{16}$ cents on the Kingston exchange on November 6th, 1959.

The quality of butter, cheese and skim milk powder was a very serious problem during the year. The quality of butter was the most seriously affected. As a result, the creamery operators and the cream producers, in co-operation with the Dairy Branch, have commenced a new quality improvement campaign.

Two cheese factories burned during 1959 and two creameries ceased to operate.

With the increased price of cheese in 1959, a few factories which have not operated for a number of years were considering re-opening in 1960.

One creamery was prosecuted for operating without a license.

Competition in some areas is very keen for milk for processing and as a result there is a considerable amount of split patronage between plants on the part of the producers.

Several cheesemakers' clubs, one buttermakers' club, two dairymen's clubs and two milk sanitarians' associations operated in the province during 1959.

Bulk haulage is being introduced into some cheese factories in Eastern Ontario and one processing plant is considering converting some of their producers to bulk haulage bringing this total up to two.

Summary of Activities of Dairy Branch Fieldmen		
	195 8	1959
Number of visits to plants	9,151	9,290
Number of cans of cream examined for quality	35,036	33,257
Number of cans of milk examined for quality	135,167	225,846
Number of cans of milk examined for sediment	60,892	60,032
Number of milk and cream examined for condition	97,131	107,865
Number of tests made on milk for bacterial activity	41,479	58,926
Number of fermentation tests made on cheese milk	7,148	5,561
Number of samples of milk tested for milk fat	39,311	32,143
Number of samples of cream tested for milk fat	11,410	14,320
Number of adjustments made	250*	639*
Number of producers visited for quality	3,977	4,524

MILK AND CREAM QUALITY

*Figures refer to milk products plants only.

Milk has been produced in this country for many years but it is only in recent years that Government regulations were brought in to assist in controlling quality.

Number of meetings attended

874

1,269

In 1938, the Dairy Branch brought in regulations under The Dairy Products Act which placed the responsibility for grading milk in cheese factories on certificate holders.

In 1949, Amendments to The Dairy Products Act brought in regulations which made it compulsory to grade milk for flavour and sediment. Licences were required to be held by those grading milk.

In 1954, regulations were brought in under authority of The Milk Industry Act, 1954, making it compulsory for plants to grade milk for flavour, sediment and bacterial activity. Each plant was required to have in charge of receiving milk, qualified men who had received their certificate of qualification by passing both a practical and a written examination.

In 1958, regulations were brought in under The Milk Industry Act, 1957, making it compulsory to grade fluid milk for flavour, sediment and bacterial activity.

Flavour

Flavour is one of the most important characteristics of milk. Many flavour problems are encountered by the fieldmen and plant milk graders when receiving milk.

Some flavours of milk have become more prominent as methods of production have changed. Rancid flavour is one that has become more prominent. Pipe line and bulk tank installations and other changes in production have increased the incidence of this flavour. Many flavours appear to be caused by poor barn ventilation and unclean feeding mangers.

Many dairies are very conscious of the flavour quality of milk received and their sales have benefited by a quality program in which flavour played an important part.

Flavour regulations are the same for both fluid milk and milk for processing. Greater tolerance in flavour is noted in milk received for processing. Adequate ventilation in barns and facilities for storing and cooling milk would bring about a marked change in the quality of milk being received for processing.

Fluid Milk Quality Program

Under the authority of the former Milk and Cream Act, Muncipalities had authority to pass by-laws covering the inspection of farm premises as to care of cows, sanitary conditions in which cows were kept and milked and care of utensils.

The Milk Industry Act, 1957, relieved Municipalities of the responsibility of passing by-laws dealing with production and brought in provincial regulations covering the production of milk.

In June, 1958, a request was received from Lincoln County to have Agriculture take over the supervision of raw milk production on the farm up to the time the milk is received in the plant. Agriculture was requested to take over other counties as time went on and last year an agreement was made between the Department of Agriculture and the Department of Health whereby Agriculture would be responsible for the supervision of raw milk production on the farm and up to the time the milk is received by the plant. From here on, the quality of the milk is the responsibility of the Department of Health. The Department of Health has agreed to run the official resazurin tests in their regional laboratories and send the reports to our fieldmen.

Under the agreement made between Health and Agriculture, Dairy Branch fieldmen are responsible for supervising the taking of the raw milk samples and the transportation of those samples to the regional Health laboratory.

The supervision of raw milk production is now under the supervision of Dairy Branch fieldmen in the following areas, in the order in which they were taken over: Lincoln County; Frontenac County; Welland County; Porcupine Area; Stormont, Glengarry & Dundas; Prescott & Russell; Oxford County; Wentworth County; North Bay.

Under the arrangement made with the Local Health Unit in Timmins and Hamilton, Dairy Branch fieldmen are responsible for the farm inspections only, the local Health Unit being resposible for taking the raw milk samples and transporting them to the laboratory.

In the exchange of responsibilities between Health and Agriculture, the Department of Health will be responsible for the inspection of processing plants, creameries and cheese factories for sanitation.

The Department of Health has not been able to assume responsibility of plant inspections up to the present time. When this work is taken over it will relieve the Dairy Branch of this responsibility and will leave more time for quality work among the producers.

Milk Quality (Fluid)—May to December, 1959

As indicated by the Sediment Test.

Grade A%	Grade B%	Grade C%	Grade D% 1.99
54.21	36.59	7.19	
54.21	36.59		

As indicated by the Bacterial Activity Test.

Grade 1%	Grade 2%	Grade 3%	Grade 4%
64 79	21.65	9.49	4.05

Milk Quality Survey-Processing Plants and Cheese Factories

In order to determine the number of producers that would eventually be shut off if the regulations were enforced, a request was made for all fieldmen to conduct a survey of the processing plants and cheese factories in respect to the bacterial activity test. A summary of this survey indicates the following:

		No.	%	No.	%	No.	%	No.	%
NO. OF PLANTS	DDODC	Grade 4	Grade 4	Grade 4	Grade 4 2nd Test	Grade 4 3rd Test	Grade 4 3rd Test	Grade 4 4th Test	4th Test
27	5965	1455	24.3	1042	17.4	628	10.5	436	1.3

This survey was carried out during the months September, October, November and December, and indicated 436 producers would have been shut off until the milk complied with at least Grade 3.

On receiving a report of the grade of their milk, 70% of the producers raised the quality of their milk to acceptable standards before the survey was completed.

Milk Quality (Processing)-May to December, 1959

Dairy Branch fieldmen periodically check the work being carried out by the processing plants in connection with the quality tests.

The sediment test indicates the qualify of milk in processing plants to be:

 Grade A%
 Grade B%
 Grade C%
 Grade D%

 34.44
 49.19
 12.99
 3.36

Bacterial Activity Grades reported by our fieldmen indicated the following for processing plants:

 Grade 1%
 Grade 2%
 Grade 3%
 Grade 4%

 21.23
 21.39
 22.07
 31.76

Milk Quality (Cheese Factories)—May to December, 1959

Dairy Branch fieldmen supervising cheese factories check the milk being received for quality. Producers of low quality milk were visited where possible.

The quality of milk received at cheese factories as indicated by the sediment test is:

 Grade A%
 Grade B%
 Grade C%
 Grade D%

 32.14
 46.54
 17.83
 3.46

As indicated by the bacterial activity test:

 Grade 1%
 Grade 2%
 Grade 3%
 Grade 4%

 43.21
 21.23
 17.48
 18.05

Producer Meetings

It is impossible for the fieldmen to visit all producers in an area. Some attempt is being made to meet them in groups in co-operation with Professor Hamilton, Extension Dairyman, Department of Dairy Science, O.A.C., Guelph.

Examinations

All graders and testers of milk and cream are required to hold a certificate of qualification. Written examinations were held twice during the year throughout the Province to assist these men in obtaining their certificates.

Total Certificates issued to date are:

	1956	1957	1958	1959	Total
Milk Graders	390	105	112	385	993
Milk Testers	546	236	122	127	1031
Cream Graders	287	85	42	52	467
Cream Testers	320	96	62	62	543
Bulk Tank Milk Graders	_	0	147	143	290

In addition to passing a written examination all graders and testers are required to pass a practical examination. Cream graders and milk and cream testers' examinations were supervised by individual fieldmen in plants. The milk

graders' and cream graders' practical examinations were held in convenient centres throughout the Province.

No. of Centres where practical milk grading examinations held — 17

No. of Candidates participating — 534

Transportation of Milk and Cream

All trucks transporting milk and cream to plants are required to have decking boards properly installed if cans are decked.

All trucks transporting milk to plants are required to be equipped with a van body unless milk is delivered by 10:00 a.m.

Dairy Branch fieldmen were requested to inspect trucks transporting milk and cream to plants and report non-compliance with the Regulations.

	1958	1959
No. of milk trucks inspected		1058
No. of trucks equipped with van bodies	224	795
No. of trucks not equipped with van bodies	263	263

Cream Quality

The quality of cream received at creameries as indicated by checks made by Dairy Branch fieldmen:

	% Special Grade	% 1st Grade	% 2nd Grade	% Reject Cream
1958	6.51	91.55	1.86	.08
1959	6.24	91.44	2.26	.06

Workshop Clinics

Workshop Clinics were held in several centres throughout the Province. These clinics were arranged through the Dairy Branch Fieldmen in co-operation with Professor F. W. Hamilton and the Dairy Departments of Guelph and Kemptville. These clinics were held to better acquaint plant personnel with the different quality tests used in determining the quality of milk and to assist the plants in planning a quality programme.

Clinics were held in the following centres with an average attendance of 18: Brockville, Barrie, St. Thomas, Eganville, St. Catharines, Goderich, Sarnia and Petrolia.

Antibiotics and Mastitis Meeting

A meeting to discuss the problem of indiscriminate use of antibiotics in the control of mastitis was held. Regulations require a producer to withhold milk from market for a period of 72 hours after an injection of an antibiotic into the udder.

A survey of the milk going out to consumers in the Toronto market for antibiotics is being conducted.

The Dairy Branch is distributing a notice to milk and cream producers in the Province warning them against marketing milk containing antibiotics. Additional notices will be sent out on the control of mastitis, to producers, from time to time.

Meetings with Department of Health

Meetings were held again with members of the Department of Health and the quality programme reviewed.

In the areas where Agriculture assumed responsibilities formerly carried out by Health, preliminary meetings were held with Medical Officers of Health.

Extension Branch

Five services are incorporated in the Extension Branch of the Ontario Department of Agriculture. The Agricultural Representatives and Home Economics Services have personnel working in every county and district in the province. The Agricultural Engineering Extension Service provides specialized assistance with drainage, farm ponds, machinery and buildings. Twelve Fruit and Vegetable Extension Specialists and two Tobacco Extension Specialists are located in areas where production of these crops is concentrated. Through these varied services the Extension Branch has continued to provide leadership and direction for the various programs designed to promote improved agriculture in Ontario. Its members have also endeavoured to assist farm families to achieve a higher standard of living and a richer, more satisfying life.

In a constant effort to improve the high standard of service, increasing emphasis has been placed on additional training for Extension personnel. The Communications short course offered during the year has proved very popular with staff members and helped them to improve their public relations program.

Continued progress has also been made in providing better office facilities. During the year several new offices were opened and older offices were renovated. These improved facilities have made it possible to offer better service to Ontario's farmers and to co-ordinate the efforts of the extension workers.

The appointment of two Soils Specialists, one at Lindsay and another at London, has provided closer liaison between the soils research program conducted at the Ontario Agricultural College and the soil and crop improvement projects directed by the Agricultural Representatives.

The most important single project directed by the Extension Branch during the year was the Ontario Farm Accident Survey. This survey was conducted in all counties and districts in Ontario for a twelve-month period March 1, 1959 to February 29, 1960. A total of 8,593 accident reports were received and are now being coded and analyzed.

In this tremendous project full co-operation was given by farm people with 5,500 volunteers serving as accident reporters. The fact that such a large number of rural people participated in the project served to focus attention on the seriousness of the farm accident picture and paved the way for the adoption of safety education programs.

A second Provincial Farm Safety Conference was held at the Ontario Agricultural College on February 9 and 10, 1960 with some 250 delegates in attendance. Purpose of the conference was to bring together a selected group of farm people to emphasize the urgency of the farm accident problem, mobilize public support for accident prevention activities and encourage organized rural groups to develop farm safety programs.

Farm Safety Councils have been organized in each county and district to facilitate safety education. The services of a Farm Safety Specialist who is an Agricultural Engineer have been provided to promote safety educational work. Efforts of these local safety councils will be co-ordinated by the Farm Safety Council of Ontario.

AGRICULTURAL REPRESENTATIVE SERVICE

In general, weather conditions were favourable for the production of most crops, particularly hay, corn and pasture. However, in some parts of southern Ontario a large percentage of fall wheat was winter killed. Other areas reported that drought during the summer, followed by wet weather during harvesting resulted in lower yields.

Lower prices for most crops, coupled with rising operating costs, resulted in lower net incomes for most Ontario farmers. This has created an increasing awareness among farmers of the value of keeping accurate records. Agricultural Representatives report more requests have been received for assistance in setting up farm accounts and for information of farm credit. In a number of counties farm management associations are carrying on an active, educational program. In addition, the Agricultural Representatives give a great deal of help to individual farmers through farm visits and office calls. During the past year, Agricultural Representatives visited 1,570 farms and 7,032 farmers called at the offices for advice on problems dealing with some phase of farm management.

Live Stock Improvement

Considerable time was devoted to live stock improvement projects. Much of this work is directed through the various breed organizations with the Agricultural Representative providing assistance in carrying out the program and often serving as secretary. Their field days and barn meetings provide opportunity for contacts with the breeders and for promoting live stock improvement policies, as well as other phases of the extension program.

During the past year much progress has been made in the control of brucellosis. A total of twenty counties and districts have been declared Certified; tests are being conducted in fourteen counties and districts and petitions have been completed or are being circulated in the remainder.

Interest has continued to grow in the work of Dairy Herd Improvement Associations, Artificial Insemination units, breed shows and sales, all of which are supported by the Agricultural Representatives.

Soil and Crop Improvement

One of the most important developments in soil and crop improvement extension was the selection of a number of Agricultural Representatives, on a trial basis, to make fertilizer recommendations for the farmers in their county. This policy has enabled the Agricultural Representative to provide more detailed information for the farmer and at the same time created more interest in soil sample tests and other projects. During the year a total of 10,913 soil analysis reports were received.

Working in close co-operation with local Soil and Crop Improvement Associations, the Agricultural Representatives have promoted maximum yield competitions, the introduction of new and improved varieties, improved soil fertility practices and weed control. Many report increasing interest in pasture improvement. A total of 67 field tours organized to observe demonstration test plots and various cropping practices met with a good response.

Assistance to Northern Ontario

The land clearing and breaking of land policy provided assistance to farmers who are endeavouring to develop an economically sound farm unit. Under this policy the Department of Agriculture pays 50% of the cost of clearing and breaking land up to a maximum of \$25.00 per acre. This assistance is available only where

there is sufficient acreage of land on the lot, or lots, considered suitable for agricultural purposes. The farms are inspected by the Agricultural Representative and farmers advised on their farm management problems.

The following summary indicates the extent of assistance granted in the different districts during the fiscal year.

REPORT OF CLAIMS FOR SUBSIDY

RE: Northern Ontario (April 1, 1959-March 31, 1960)

County	No. Farms	Acres Cleared and Broken	Amount Spent	No. Wells	Amount Spent	$Grand \ Total$
Algoma	12	62	1,550.00			1,550.00
Cochrane North	98	1,279	30,086.25	11	2, 039. 85	32,126.10
Cochrane South	48	619	14,459.90	5	1,479,26	15,939.16
Kenora	19	2591	7,836.61	***************************************		7,836.61
Manitoulin	24	2251	4,932.46	9	1,430.86	6,363.32
Muskoka & Parry		_	Ť		Ť	
Sound	25	168	4,400.00	10	2,067.40	6,467.40
Nipissing	87	856	21,408.65	20	4,987.57	26,396.22
Rainy River	40	518	12,173.58	18	3,095.20	15,268.78
Sudbury	57	3831	9,587.50	8	1,643.85	11,231.35
Temiskaming	165	2,174	53,469.64	18	3,982.71	57,452.35
Thunder Bay	26	319	7,492.34	10	2,458.27	9,950.61

Total Spent \$190,581.90

In order to evaluate the various enterprises on farms in Northern Ontario the Department of Agriculture selected two farms in each district as Co-operating Farms. The sixteen farmers accepted as Co-operators maintained accurate accounts of their whole farm operations. Their books were analyzed and recommendations made by the Agricultural Representative to improve labour earnings on these farms. The information obtained from these farms will be made available to other farmers in the districts of Northern Ontario to assist them in their choice of enterprise and to decide the number of acres under cultivation required for a satisfactory dairy or beef unit. These projects will be maintained on each farm for a minimum of five years in order to compare the value of a sound management program.

Service Clubs

Service Clubs have continued their generous support of agricultural programs, particularly 4-H Club work. During the year, total contributions of \$21,816.47 were received from 166 Service Clubs to support 4-H clubs in the form of prize money, trophies, banquets, tours or scholarships. Many Agricultural Representatives are members of local Service Clubs. They believe that the close connection between the two organizations has contributed much to the development of better rural-urban relations.

Rural Community Night Schools

Community night schools, sponsored jointly by the Ontario Department of Agriculture and the Ontario Department of Education, were held in twenty-two counties and districts. These courses, offering information on a wide variety of subjects, continued to attract a large number of rural people.

Press, Radio and Television

Excellent coverage of agricultural activities was provided by daily and weekly press, radio and television stations. Many of the Agricultural Representatives

prepare a regular weekly column for the press. Radio broadcasts and telecasts are being used more widely to promote extension activities. During the year, Agricultural Representatives prepared 3,716 press releases and 3,029 radio broadcasts and participated in 235 television programs.

4-H CLUB PROGRAM

In 1959, a total of 24,698 projects were undertaken by young people enrolled in this program in Ontario. Each of these young people who range in age from 12 to 20 years, carried on an active project located on the home farm. The Agricultural Representative Service takes the major responsibility for the direction and management of 4-H Agricultural Club Work in Ontario, and pays one-third of the prize money to Club members. 4-H Homemaking Clubs are organized by the Home Economist under the direction of the Home Economics Service. Following is a summary of the 4-H Clubs organized in 1959.

Agricultural Clubs	No. Clubs	Membership
4-H Calf Clubs	340	6,187
4-H Swine Clubs	53	710
4-H Sheep Clubs	10	130
4-H Poultry Clubs	18	310
4-H Grain Clubs	62	889
4-H Field Crop Clubs	59	943
4-H Potato Clubs	68	1,174
4-H Tractor Clubs	48	723
4-H Forestry Clubs	22	483
Miscellaneous 4-H Clubs	11	163
	-	
Homemaking Clubs	691	11,712
Foods	409	3,902
Clothing	425	3,850
Housefurnishing	161	1,400
Club Girl on Guard	84	817
Club Girl Entertains	176	1,894
Gardens	127	1,123
	1,382	12,986

Voluntary Leadership

With the ever-increasing membership in 4-H Club Work in Ontario, the work of the Voluntary Club Leader in assisting the Agricultural Representative with this work has become increasingly important. Last year there were approximately 1,200 Leaders working on a voluntary basis in the various counties, assisting in many ways in the promotion of Club Work.

In many counties, the work of the Club Leaders is co-ordinated by a Club Leaders' Association. The Department of Agriculture provides an opportunity for Club Leaders to meet in the various counties to plan programs and to evaluate the results of the work being carried on. A special short course for 4-H Club Leaders is provided during Short Course Week at the Ontario Agricultural College, early in the New Year.

In recognition of the leadership given on a voluntary basis, the Ontario Department of Agriculture again provided a complimentary trip to the Royal Winter Fair. A complimentary trip was also provided to the Ontario Soil and Crop Improvement Association Convention for those Club Leaders who did not wish to attend the Royal Winter Fair.

Provincial 4-H Club Leadership Week

This Leadership Week was initiated in Ontario in 1959 and was held at the Ontario Agricultural College, Guelph. Each county and district was eligible to select one 4-H member with basis of selection on total participation in 4-H, record of 4-H Inter-Club competitions and participation in community activities. Forty-three 4-H boys were selected in the Province for this Leadership programme.

Wm. H. Danforth Leadership Training Scholarship

This scholarship was initiated in Ontario in 1958. The scholarship is awarded to one 4-H boy and one 4-H girl, and provides two weeks of intensive training at the American Youth Foundation Training Camp, Stone Lake, Oceana County, Michigan, U.S.A. Last year the scholarships were awarded to:

Miss Eleanor Patterson, Meaford, #2, Grey County.

Mr. Donald William Taylor, 1309 Appleby Line, Burlington, Halton County.

4-H Inter-Club Competitions, New Liskeard

The sixth Annual 4-H Inter-Club Competitions were held for Northeastern Ontario, at the Demonstration Farm, New Liskeard, on October 2nd, for the Districts of Algoma, Sudbury, Manitoulin, Cochrane North, Cochrane South, Cochrane West, Temiskaming, Nipissing, Muskoka and Parry Sound. There were 48 teams taking part in agricultural club projects. The winners were:

	Teams			
	Com-			
Project	peting	Winning Team Members	County	Coach
Dairy Calf	16	Rheal Rainville, Verner, #1	Nipissing	F. J. G. Millette
		Rheal Brouillette, Verner, #1	27	
Beef Calf	11	David Edwards, Thornloe, #2	Temiskaming	M. F. Cook
		Jim Miller, Thornloe, #2	33	G. M. Mills
Potato	18	Kauno Kivioja, Timmins, Box 381	Cochrane S.	L. H. Hanlan
		Arthur Leduc, Timmins, Box 148	**	A. Beauchesne
Forestry	3	Jim Cooper, St. Joseph Island	Algoma	J. M. MacIntosh
		Myrna Martin, St. Josph Island	22	C. Tanner

4-H Inter-Club Competitions, Guelph

The Inter-Club Competitions for provincial honours were held at the Ontario Agricultural College, Guelph, on October 23rd, 1959, with 536 boys and girls in 268 teams taking part in agricultural club projects.

	Teams Com-			
Project	peting	Winning Team Members	County	Coach
Dairy Calf	87	Bill Parkinson, Brampton, #1 Bill Clarkson, Brampton, #1	Peel "	J. W. McCullough D. E. Jackson
Beef Calf	38	Hugh Kennedy, Ilderton, #4 Tom Shoebotton, Denfield, #4	Middlesex	W. K. Riddell C. L. Hamilton
Swine	20	Glen Steven, Wanstead, #1 Ivan Steven, Wanstead, #1	Lambton	W. T. Abraham C. B. Schneller
Poultry	6	Carol Hitchcock, Sunbury, #1 Joe Nolan, Verona, #1	Frontenac	D. A. MacArthur
Grain	31	Donald Cockburn, Puslinch, #1 Rita Crow, Hespeler, #2	Wellington	W. D. Black H. J. Stanley

Field Crops	21	Bernard Murray, Embro, #3 Murray Stephen, St. Mary's, #1	Perth	R. E. White B. L. McCorquodale
Potato	18	Wayne Flindall, Trenton, #4 Jim Rusk, Brighton, #4	Northumber- land	R. C. Banbury E. B. Burnside
Forestry	11	Anthony Taylor, Almonte, Box 189 Peter Taylor, Almonte, Box 189	Lanark	A. G. Grubbe M. Waldron P. Courtice
Tractor	36	Terry Wringe, Marysville, #1 Bernard Whalen, Marysville, #1	Hastings	S. MacDonald C. J. Nesbitt J. Clark

Canadian Council on 4-H Clubs

This organization is set up for the primary purpose of co-ordinating and co-relating the various provincial 4-H Club programs across Canada. The organization is composed of representatives from the Canada Department of Agriculture as well as from the ten Provincial Departments of Agriculture, together with 38 industrial members and 12 Associate members who represent various national agricultural organizations.

K. E. Lantz, Director of Extension was in charge of 4-H Club Work in Ontario in 1959 and served as a Provincial Director on the Council.

The Ontario Department of Agriculture makes an annual membership grant of \$3,300.00 to the Council.

National 4-H Club Week

One of the main functions of the Canadian Council on 4-H Clubs is to sponsor National 4-H Club Week. This event provides an opportunity for outstanding 4-H Club members in Canada to meet together.

Ontario sent 14 delegates to National Club Week. Seven of the delegation were selected from 4-H Homemaking Clubs and seven from 4-H Agricultural Clubs. Those selected were as follows:

4-H Homemaking Club Delegates

Lorraine Wright, Matheson (Cochrane South)
Margaret Cathree, 655-3rd Ave. E., Owen Sound (Grey)
Frances Tucker, Belleville, #2 (Hastings)
Shirley Waite, Caister Centre, #3 (Lincoln)
Violet Reis, Milverton, #2 (Perth)
Sylvia Naida, Fort William, #2 (Thunder Bay)
Elizabeth Barker, Gormley, #2 (York)

4-H Agricultural Club Delegates

Lloyd Wilson, Uxbridge, #2 (Ontario)
David Jackson, Wilton Grove, #1 (Middlesex)
James Wilker, Woodstock, #6 (Oxford)
H. Campbell Murray, Martintown, #2 (Stormont)
Allen Scheel, Arnprior, #2 (Renfrew)
Mack Emiry, Massey, #2 (Sudbury)
Douglas Rollins, Plainfield (Hastings)

JUNIOR PROGRAMMES AT CLASS "A" EXHIBITIONS

Central Canada Exhibition, Ottawa

There were 108 teams competing on August 25th, 1959, in the General Agricultural Competition, represented by 309 Club members.

A Club Camp was held in connection with this Competition. Camp members spent a day at the Experimental Farm, and were taken on a tour of the City and Parliament Buildings. There were some 500 boys and girls attending this camp. A special feature of the camp was a parade to the grandstand by counties.

Peterborough Exhibition

A total of 130 boys and girls took part in the Junior Agricultural Program at Peterborough Exhibition on August 12, 1959.

The program included Live Stock Judging Competitions, an Agricultural Quiz and an Identification and Machinery Defects Test. In the evening the juniors were guests of Canada Packers at a dinner and were guests of the Exhibition at the evening grandstand performance.

Canadian National Exhibition, Toronto

There were 259 contestants taking part in the Live Stock Judging Competitions, 127 contestants taking part in the Fruit and Vegetable, Grain and Roots and Farm Machinery Test Competitions, 26 in the Tractor Safe Driving Competition, and 294 in the Farm Safety Quiz, on Wednesday, September 9th, 1959.

The boys and girls taking part in these competitions were provided with an evening meal, a pass to the grounds and a ticket to the evening grandstand performance through the courtesy of the Canadian National Exhibition Association.

Western Fair, London

There were 209 boys and girls taking part in the Junior Agricultural Program at Western Fair, on September 14th, 1959.

In addition to the live stock judging competitions, the program included a Live Stock quiz and a Field Crops quiz. The contestants were served dinner thorugh the courtesy of the Western Fair Association and were also their guests at the evening grandstand performance.

INTER-COUNTY LIVE STOCK JUDGING COMPETITIONS

Royal Winter Fair, Toronto, November 12th, 1959

Twenty-three teams were entered, comprised of three contestants per team. JEFFREY BULL MEMORIAL TROPHY—Won by Carleton County.

Winning Team Members—Dwayne Acres, Osgoode, #4.

Harold Crawford, Richmond, #3. Delmer Cavanagh, Kinburn.

Coaches: W. M. Croskerv, Agricultural Representative. R. A. Thomson, Assistant Agricultural Representative.

ONTARIO VETERINARY CHALLENGE TROPHIES

Dairy Cattle—Won by Peel County Wm. Clarkson, Brampton, #1. David Julian, Malton, #3. Wm. Parkinson, Brampton, #1. Beef Cattle—Won by North Simcoe County

Bob Tudhope, Hawkestone, #1.

Bob Rawson, Vasey, #1.

Donald Woodrow, Moonstone, #1.

Swine—Won by Carleton County

Dwayne Acres, Osgood, #4.

Harold Crawford, Richmond, #3.

Delmer Cavanagh, Kinburn.
ROBERT GRAHAM MEMORIAL TROPHY—13 entries.

Won by: R. W. Graham, Ontario Agricultural College

E. H. STONEHOUSE MEMORIAL TROPHY.

Won by: Wm. Parkinson, Brampton, #1, Peel County.

E. A. SUMMERS MEMORIAL TROPHY—69 entries.

Won by: Ronald Smith, Brussels, #2, Huron County.

F. K. Morrow Scholarship Award—14 entries.

Won by: Ron Gardiner, Glencoe, #2, Middlesex County.

Gold medals were awarded to the top contestant in each of the breeds of live stock judged.

Ottawa Winter Fair, Ottawa, October 27th, 1959

Seven counties were entered represented by 23 contestants.

OTTAWA WINTER FAIR TROPHY—Won by: Hastings County.

Winning Team Members—Ronald Hamilton, Trenton, #5.

Paul McKeown, Campbellford, #2. Ronald Heath, Stirling, #1.

Coaches: S. MacDonald, Agricultural Representative.

C. J. Nesbitt, Assistant Agricultural Representative.

Silver Medals were presented to top contestants in each of the breeds of live stock judged.

INTER-AGRICULTURAL SCHOOL LIVE STOCK JUDGING COMPETITION

Royal Winter Fair, Toronto, November 12th, 1959

This competition is open to teams consisting of 4 students enrolled in the second year of a Diploma Course at an Agricultural School, College or University.

Three teams entered, comprised of 4 contestants per team. Won by: Western Ontario Agricultural School.

Winning Team Members: George Early, Kerwood, #3.

Ivan Steven, Wanstead, #1. Mac Parker, Watford, #8.

Donald Lobb, Clinton, #2.

Coached by: J. W. Underwood, Livestock Division

Western Ontario Agricultural School, Ridgetown.

JUNIOR FAIRS

4-H Calf and Swine Club Championship Show, Ottawa

The Ottawa Winter Fair Association, through financial assistance granted by the Canada and Ontario Department of Agriculture, staged the Eastern Ontario 4-H Calf and Swine Club Championship Show during the Ottawa Winter Fair, on October 27th, 1959.

Queen's Guineas Class, Royal Winter Fair, Toronto

Two hunderd and four 4-H Club members entered baby beef calves in this class at the Royal Winter Fair, on Thursday, November 19th, 1959.

The Aberdeen-Angus steer shown by George Early, Kerwood was made Grand Champion of this Class and the Queen's Guineas and the Hon. T. L. Kennedy Trophy were presented by the Honourable Keiller MacKay, Lieutenant-Governor of Ontario and Dr. C. D. Graham, Deputy Minister of Agriculture, respectively. Following is a summary of this class:

Entries -	- Shorthorn	70
	Total	204

FIRST PRIZE CALF IN EACH CLASS

Shorthorn — Leslie Wernham, Denfield. Aberdeen-Angus — Wayne Watson, Denfield. Hereford — Rodger Kieffer, Wingham.

WINNER OF QUEEN'S GUINEAS-\$250.00

George Earley, Kerwood. Weight of Calf — 855. Sale Price — \$2.20 per lb.

RESERVE CHAMPION (Shorthorn)

Ken Black, Belgrave. Weight of Calf — 835. Sale Price 45 cts. per lb.

Average Sale Price per lb. of Calves exclusive of Champion and Reserve Champion — 32.7 cts. per lb.

JUNIOR FARMER EXTENSION WORK

Extension Branch personnel in the county and district offices assist in the program of local and county Junior Farmer Associations. These Associations, which have as their motto "Self Help and Community Betterment", offer a program to their members which is educational, practical, social and recreational. Excellent co-operation exists between Junior Farmer Associations and Extension Branch personnel.

Junior Farmers' Association of Ontario

The office of Secretary-Treasurer of the Association is held by the Assistant Director of the Branch and for that reason the work of the Branch is closely associated with Junior Farmer work throughout Ontario.

Membership

Some 6,760 members representing 230 Junior Farmer and Junior Institute clubs affiliated with the Provincial Association in 1959-60. This is a slight increase over the 1958-59 membership.

Public Speaking

The Provincial Public Speaking Competition attracted 19 participants representing many local and county competitions throughout the Province. The \$100.00 educational scholarship offered by the Association to the high ranking contestant was awarded to Bill Boulton, Leeds County. Four contestants receiving honourable mention were: Joan Berge, Waterloo County; Francis Doris, Peterborough County; John Hohenadel, Wellington County; and Marie Sheridan, Lanark County.

Debating

Nineteen counties made entry in and competed in the preliminary round of the Provincial Debating Competition. The topics selected for this year's debates, up to and including the finals are as follows: Rounds 1 and 2 — "Resolved that Ontario farms should be larger". Rounds 3 and 4 and Finals — "Resolved that a new method of marketing milk and cream in Ontario is needed".

The debating competition provides much information for the participants and audiences and also affords an excellent opportunity for training in public

speaking.

Choirs, Quartets and Trios

Dr. Leslie R. Bell and Mr. C. L. Bird, adjudicators for the music events held at the time of the Toronto Conference in January, commended all participants for their interest in music. A large crowd enjoyed quality singing and excellent adjudicating.

Waterloo County won the mixed quartet competition; York the ladies' trio competition, and Ontario the male quartet competition.

A non-competitive, choir festival attracted choirs from the counties of Wellington, Bruce, Brant, Middlesex, Huron and Ontario.

Drama

For the past number of years, several counties have held drama festivals. This year interest was sufficient to warrant a provincial drama festival which was held in War Memorial Hall, Ontario Agricultural College, Guelph, on April 22nd. The counties of Bruce, Peel and Waterloo participated. "This Way of Heaven" presented by the Woolwich Junior Farmer Club from Waterloo County was declared winner. The Best Actress Trophy was awarded to Miss Emma Buehler and the Best Actor Trophy to Ronald Durst, both from the Woolwich Junior Farmers.

Leadership Training Schools

Five one-day Junior Farmer Leadership Training Schools were planned and conducted by provincial directors. These are held at Simcoe, Ridgetown, Formosa, Brighton and Brampton. Attendance was extremely good at three of the schools but quite limited at the other two because of stormy weather.

Conferences

The Junior Farmer Conference held in January in Toronto had a registration of 736 and the one-day conference for Junior Farmers in Eastern Ontario held at Kemptville was well attended. Highlights of Toronto Conference were the music and public speaking competitions and of the Kemptville Conference, talks by Mr. D. L. Parks, Miss Eleanor Saracuse and the Russian Ambassador, His Excellency Dr. Amasasp Aroutunian.

The Provincial President again assisted with the annual 4-H Conference at New Liskeard.

Television

TV competitions were held at Barrie, Peterborough, Kitchener, London and Wingham and the following counties received prize money in these five competitions: Barrie — South Simcoe, North Simcoe, Ontario; Peterborough — Durham, Peterborough, Victoria Northumberland; Kitchener — Norfolk, Waterloo, Perth: London Lambton, Kent, Middlesex, Elgin, Oxford; Wingham — Bruce, Grey, Dufferin, Huron, and Wellington.

All competitions were organized by county directors with full co-operation of the local Television stations. This project does much to keep the Junior Farmer organization in the public eye and at the same time gives valuable experience to participants and extends much agricultural information to a large number of viewers.

O.F.A. Prince and Princess Competition

Junior Farmers co-operated with the Ontario Federation of Agriculture in organizing and conducting local, regional and provincial competitions to select a provincial Federation of Agriculture Prince and Princess, Winners were Doreen Garrett, Middlesex County, and Francis Doris, Peterborough, who received an expenses-paid trip to Jamaica.

Sports

The Field Days at Guelph, Ridgetown, Peterborough and Kemptville were well

attended, efficiently run and competition was particularly keen this year.

The largest Curling Bonspiel to date was held at the Physical Education Building, Ontario Agricultural College, Guelph, with 32 rinks participating, and of this number, four were ladies' rinks. York County won the men's bonspiel and Waterloo County, the ladies' bonspiel.

Animal Health Short Course

Thirty-eight young men who attended the Animal Health Short Course were high in their praise of the subject matter covered and the very competent instructors. This course is arranged through the co-operation of Dr. W. R. Mitchell of the Ontario Veterinary College and is held at the same time as the regular short courses but is restricted to selected Junior Farmers.

TRAVELLING SCHOLARSHIPS

Travelling scholarships continue to provide memorable experiences for Junior Farmers. The following are Junior Farmers from Ontario who were awarded travelling scholarships and also the names of visiting delegates to Ontario:

Overseas Trip — Betty Opersko, Norfolk; Jeanne Pearson, Ontario; Keith Richard-

son, Haldimand; and Walter Clark, Peterborough.

Province of Manitoba - Jean Smithers, Lincoln County; and Mac Arbuthnot, Russell.

Laquemac — Dorothy Humprey, Wentworth.

A.I.C. Annual Meeting — John A. Rowe, Manitoulin.

RYUSA Conference — Barbara Trathen, Peel; Betsy Sparrow, Carleton; Murray

Sharp, Brant; and Gordon Murray, Victoria.

New England Y.M. & Y.W. Conference - Mary Howe, Elgin; Gladys Elphick, Bruce; Donald Henry, Stormont; and Warren Ross, Wellington.

Tri-State Conference — Thelma Kay Schuyler, Norfolk, Fern Tinney, Northumberland; Robert J. McRonald, Grey; and Howard Herrle, Waterloo.

Provincial Rural Leadership Forum — Mrs. Mary Hinan, Peterborough; and Mac Arbuthnot, Russell.

Visitors to Ontario

Prince Edward Island - Mrs. Jean MacRae, Mrs. Edith Rackham, Bruce Small, Peter Campbell, and Peter Sauer.

Alberta — George Doupe and Gerald Schuler.

Northern Ireland — Trevor Neill.

Scotland - Margaret Steven, Beth Aitchison, Frank Farquharson and John Fettes. England - Dorothy Clough, Elizabeth Davies, Philip Glassford and Michael Hill.

Provincial Leadership Training Camp

The secretary of the Association annually directs the Junior Farmer Provincial Leadership Training Camp at Geneva Park, Lake Couchiching in September. Seventy-nine campers were in attendance in 1959. This camp is subsidized quite extensively by the Ontario Department of Agriculture. However, one needs only to watch the competence of former campers in their various leadership roles to be convinced of the worth of "Provincial Camp".

Soils and Land Use Tour

A three-day Junior Farmer Soils and Land Use Tour for one young man from each county and district was organized by Prof. N. R. Richards, Head, Department of Soils, Ontario Agricultural College, Guelph, the Secretary of the Provincial Junior Farmers' Association of Ontario, and the Agricultural Representatives in Huron, Middlesex and Oxford counties. An outstanding group of young farmers participated.

Affiliations

The Association is affiliated with and nominates representatives to other farm organizations and associations in Ontario. These are:

Federated Women's Institutes of Ontario - Janet Oliver, Brantford, #6, and

Doreen Brock, Granton, #1.

Royal Agricultural Winter Fair — Robert Williams, Picton #1, and Walter Clark, Norwood, #2.

Canadian National Exhibition — Ron Werry, Oshawa, #1.

Ontario Plowmen's Association - Wray Marshall, Caistor Centre, \$1 and Bob

Tuckey, Komoka, #4.

Ontario Federation of Agriculture — Keith Richardson, Dunnville, #4; Mac Sprowl, Acton, #4; Ken Ferguson, Alvinston, #7; Dave Barrie, Galt, #7; Allen Scott, Princeton, #2; and Russell McAllister, Smiths Falls.

Ontario Conservation Council - Jack Cockburn, Drumbo and Carl Boynton,

Woodbridge

Rural Leadership Forum — John McNeil, Elgin.

Junior Farmer and 4-H Quarterly

The Junior Farmer and 4-H Quarterly is published by the Extension Branch for Ontario Junior Farmers and 4-H members. Over 17,500 copies are mailed to farm families, press, radio and TV outlets, extension personnel and other interested individuals. The Quarterly features educational articles as well as stories and pictures of Junior activities. The publication of this helps to co-ordinate and promote the Department's Junior program.

THE AGRICULTURAL ENGINEERING EXTENSION SERVICE

The requests by farmers for assistance in the Agricultural Engineering Field this past year have again markedly increased.

In many areas, farmers wishing to increase the size of their business found that they were unable to purchase land close to the home unit. Drainage of wet fields helps to increase the productivity of the land already in their possession. In this way, farmers are able to produce more feed per acre and thus produce more cash crops or feed more livestock with a resultant higher income per farm. This explains why drainage surveying continues to be the major summer activity of the Agricultural Engineering Extension Service.

Tile-machine operators in easy terrain normally install tile without the benefit of one of our surveys. Where there is difficulty in determining outlets or in the high-priced orchard land, surveys are always made by our staff, with the exception of circumstances that deal with the Ditches and Watercourses act and the Muncipal Drainage act.

It is estimated that about 38,500,000 tile of all sizes were installed in the Province during 1959. Of this total 14,000,000 were installed on surveys made by our Agricultural Engineering Extension staff.

The shortage of farm labour continues to be the major reason for the mechanization of farms. Farmers each year are seeking the advice of our specialists on the economical machines to purchase for their particular needs.

In most parts of the Province, very few changes have been made in barns for the past forty years. The point has been reached where changes must take place. The work in forage and crop production, with the encouragement of better varieties, fertilization, and drainage, has increased production per acre to the extent that many farmers have the problem of remodelling their present barns or building additional facilities to take advantage of all the feed produced.

A meeting of the Liaison Extension and Research Committee in Agricultural Engineering was held in Vineland, October 5 and 6. This committee, since its organization, has functioned exceedingly well. Mr. Wm. Kalbfleisch, Chief, Engineering Research Service, Canada Department of Agriculture, and personnel of the Engineering Science Department, O.A.C., with the committee of Agricultural Engineering Extension people, reviewed research work presently under way. New projects being planned at Ottawa and Guelph were outlined.

Summary of Extension Services

1. Drainage

Total calls	829
Number of acres systematically surveyed	18,628
Number of feet of profile surveyed	123,070
Number of feet of open ditch surveyed	46,260
Number of preliminary surveys	127
Number of advisory surveys	179
Number of inspections	21
Number of erosion control calls	4
Number of applications on file	700

On March 31, 1960, 110 fewer applications were on file than on the same date last year.

With the help of the nine summer assistants the number of farmers serviced was increased by 244 over the previous year.

The summer assistants made 292 calls; systematically surveyed and produced plans for 10,360 acres; and made profile plans for 108,000 feet of tile.

Sufficient drainage tile was manufactured to keep up with the demand in most areas of the Province. In central Ontario the supply was somewhat limited for a short period. Most tile plants produced a considerable stockpile during the late fall of 1959 and early spring of 1960.

During the year tile prices showed a slight increase of 5ϕ to 7ϕ per foot, with installation charges at 5ϕ to 11ϕ per foot depending upon the soil type and depth of trench.

Twelve townships passed bylaws enabling farmers to borrow money for drainage under the Tile Drainage Act. This brings the total to 192 townships which have passed the bylaw.

A total of \$769,400 was borrowed under the Act during the 1959-1960 fiscal year. This shows a decrease of \$231,900 from the previous year.

2. Pond surveys

Dams designed	87
Dugout ponds designed	178
Total	265
Applications on file	300
43 ponds were inspected in central Ontario.	
13 irrigation systems were planned in various parts of the l	Province.

3.

Farm structures	
New buildings designed	272
Buildings and stables remodelled	442
Ventilation calls	140
Total	854

Building and ventilation applications on file — 450.

Service given on structures and ventilation have increased by 110 over the previous year.

4. 4-H Clubs

Thirty-two 4-H Tractor Clubs were organized with a total enrollment of 425 members. The members in most clubs conducted demonstrations and were visited during the year.

5. Extension Talks

The Agricultural Engineering Extension staff addressed 208 meetings of various farm groups with an approximate attendance of 14,350.

THE FRUIT AND VEGETABLE EXTENSION SERVICE

The Fruit and Vegetable Extension Service with its prime endeavour to improve the farm family unit has continued to render and expand its services to those engaged in the production of fruits and vegetables in Ontario. The personnel of the Service is comprised of twelve technically trained men located in the main production areas and who render assistance to growers in culture and marketing of their crops.

The Extension Specialists bring to producers not only new and improved practices, but the results of research. Extensive use is made of demonstrations, press, radio, television and organized meetings in an endeavour to reduce the cost of production and provide a more satisfactory economic and social life for these growers of specialized crops.

General Crop Conditions

The growing season of 1959 will be remembered mainly as one when there was generally low rainfall and extreme high temperatures which had an adverse effect on the production of fruits and vegetables. As a result of heavy snow cover in Eastern Ontario during the winter of 1959, severe damage was caused to fruit trees by mice. Some parts of the Province had a covering of ice for a long period which smothered strawberry plants. The extreme low temperatures caused some bark splitting to trunks of apple trees in Central and Eastern Ontario. One or two orchards in the Ottawa area were very severely damaged with the result that one orchard will not recover in spite of an endeavour to tack the bark back to the wood. While no extreme low temperatures were recorded in Essex County, it is estimated that 20 per cent of the peach trees had to be removed in the spring of 1959 because of winter injury.

The spring season got under way in a normal manner but the month of April was somewhat cool. Vegetable growers completed their plantings without too much interruption from weather. Fruit trees showed a moderate to heavy show of bloom which would indicate a heavy crop of fruit for the season. By the middle of June with very little rainfall and higher temperatures, some crops, especially strawberries, were beginning to show the effects of weather. Strawberry quality deteriorated badly just after the peak period. Those with irrigation used it to good advantage.

As the season advanced into July, the high temperatures affected the vegetable crops in Central Ontario with the result that the early season crops did not mature properly. This was especially so with cauliflower where heads did not form in a usual manner and along with Fusarium yellows, the crop was drastically reduced. The cabbage crop was also reduced by weather and diseases. Early vegetable crops in Essex County fared better than in Central Ontario.

The muck vegetable areas were not affected too much by weather except that it contributed to the development of short carrots and poor yields of immature potatoes, mostly of the Huron variety. Lettuce, on the whole, throughout the season was of good quality and the demand was high.

On July 6th a very severe hail and windstorm struck the Niagara Peninsula. Starting near Hamilton it travelled the length of the area increasing in intensity until it passed into New York State. What was thought to be a fair crop of cherries was drastically reduced by the storm. Damage in some orchards amounted to at least 50% but overall damage was probably 25% to 30%. Processing quality was the lowest in years. Pears and grapes were also hit badly by hail with complete loss in some orchards. However, exceptional eagerness on behalf of processors saw a good amount taken up for processing. Quality of the processed product again suffered, except for grapes which had a very high sugar content. The peach crop was also damaged to some extent. Generally the crop was down by about 20% from 1958 with the fresh and processing varieties moving well with only two minor difficult periods during the Jubilee and Elberta season. Size in some cases was down.

As the season progressed into late August and September, the lack of moisture and high temperatures certainly were felt by all crops in that season. Apples particularly ripened with little colour and there was much concern for the fall and winter varieties which would go into storage. The crop at this point was estimated to be about four million bushels, slightly down from the previous year's crop.

About September 10th the weather changed with good rains and cooler temperatures. With clearing weather, cooler temperatures at night, the fall and winter varieties coloured very quickly. However, many growers waited for colour, especially on McIntosh with the result the fruit was overmature going into cold and controlled-atmosphere storage. This condition was considerably worse in Central and Eastern Ontario. The keeping quality of the apples in Western Ontario and Georgian Bay area was remarkably good considering the adverse weather during the growing season.

The late muck soil vegetable crops were only fair. Despite the wet conditions at harvest time, onions emerged from storage in good condition. The quality of potatoes certainly was not the best. Muck soil vegetable growers are constantly searching for new crops to grow and sell. It is worthy of note that there is interest in the production of broccoli on muck soils for the packaging trade.

Insects and Diseases

A growing season which experiences high temperatures and low rainfall is usually indicative that insects will be the main problem and 1959 proved no exception. In areas where there was more rainfall, diseases did cause some concern to fruit and vegetable growers.

Insects which were a problem to fruit growers were as follows: Oriental Fruit Moth; European Red Mite and Two Spotted Mite; Codling Moth; Peach Tree Borer and Lesser Peach Tree Borer; Grape Berry Moth; Mealy Bug and Lecanium Scale on Grape; Aphids; Plum Curculio; Apple Maggot on Apples and Prunes; and Nematodes on Cherry and strawberry roots.

Diseases of fruit crops were less difficult with the exception of Verticillium wilt in strawberries, apple scab in areas where there was more rainfall in the early season and pear blast.

Insects which proved troublesome to vegetable growers in 1959 are: cabbage loopers and onion maggot on bunch onions.

Major diseases on vegetable crops were as follows: Verticillium wilt and anthracnose on tomatoes, leaf spot on carrots, bacterial soft rot and cabbage yellows on crucifers, aster yellows on head lettuce and blotchy ripening in tomatoes.

In connection with the control of insects and diseases, it is of interest that fruit and vegetable growers are taking an increasing interest in the use of aircraft for spray and dust application. Some pollen was applied by aircraft in the bloom period but this method of application is questionable.

Demonstration Work with Fruit and Vegetables

A good medium for extension work is the use of demonstration plots on growers' farms so that growers may observe the results. During the year Fruit and Vegetable Extension Specialists had many demonstration plots.

Research Work on Fruits and Vegetables

The Province of Ontario is indeed fortunate in having many research centres carrying out research projects designed to help the fruit and vegetable grower. Many of the projects being of the applied type require further tests under field conditions. The Extension Specialists assist research in lining up plots on growers' farms to assist in these research projects.

The Orchard Spray Service

The successful production of fruits and vegetables necessitates successful control of various pests which attack these crops. In order to assist the grower in the identification and methods for control of pests, timely letters are prepared and forwarded to growers. This service requires that the Specialist must be constantly alert as to the proper timing of sprays and notify the growers accordingly.

Marketing Assistance

The marketing of fruits and vegetables is a real problem to Ontario growers. Growers' organizations are continually requesting assistance in the field of marketing. Fruit and Vegetable Extension Specialists endeavour to assist by providing information on crop estimates, picking requirements, storage, packing, shipping and to some extent advertising and promotion.

Leaf Analysis Service

The Leaf Analysis Service operated by the Horticultural Experiment Station for the benefit of growers of apples, peaches and grapes, completed its second year of operation. The grower response to this service was not quite so good as the previous year except that a larger number of grape growers took advantage of the service. The number of growers requesting the service were as follows: Apples 195, Peaches 62 and Grapes 57.

As the 1959 season was unusually hot and dry, nitrogen and potassium levels were considerably lower than in a year with normal rainfall. The average nitrogen level was 1.94% and this varied from a high in Prince Edward County of 2.14% to a low of 1.78% in Norfolk, In 1958 potassium levels were generally low and weather in 1959 influenced this condition to the extent that average levels in 1959 were still lower than in 1958. Orchards in which the soil supply of potassium was marginal suffered. The level for potassium was 1.41% as compared to an ideal level of 1.7% or better. Low levels of magnesium were also apparent in a number of orchards in Eastern Ontario.

The Fruit and Vegetable Extension Service co-operates with the Horticultural Experiment Station in processing the applications from growers, collecting fees and leaf samples. Where necessary the Extension Specialist gives advice to growers on the interpretation of the analysis as the Specialist usually has a knowledge of the orchard. Leaf analysis is also used by the Extension Specialist in problem orchards.

Farm Business Management

Fruit and vegetable growers are becoming more aware that their farms are a business enterprise and should be treated as such. A profitable farm business must of necessity keep a full set of records and an account book not only for the farm business angle but as an integral part of the farm management program. The Fruit and Vegetable Extension Specialists have been trained in farm business management and are prepared to give increasing assistance to growers and their business.

4-H Club Work

The Fruit and Vegetable Extension Specialists take an active interest in the 4-H Club program in many counties by providing technical information to the club members and the leaders. Assistance is mainly given to potato, grape and strawberry clubs.

Press, Radio and Television

The local weekly and daily press provide an excellent medium for promotion of the various extension programs. Space is provided for articles on culture and management as well as many announcements of meetings and other activities. During the year Fruit and Vegetable Extension Specialists prepared one hundred and thirty-eight press releases.

Radio stations in the fruit and vegetable producing areas of the Province are most co-operative by providing much time to Extension Specialists as a medium for extension work. As schedules for programs are set up for daily, weekly and monthly broadcasts, growers make use of the information as it is directed to them. Many stations will give special time in periods of emergency. Specialists participated in 257 broadcasts as well as preparing 27 radio tapes for the Ontario Radio Tape Service.

The use of television is becoming increasingly important as a visual aid for extension. As programs must be prepared for both rural and urban audiences,

considerable time is required for the presentation. Extension Specialists co-operated with Television stations in seven live telecasts.

Farm Accident Survey

The Fruit and Vegetable Extension Specialists have co-operated with the Agricultural Representatives in the organization of this survey. It would appear from the survey that accidents to fruit growers are caused by carelessness in the use of ladders during pruning and harvest. The survey does not indicate many cases of poisoning as the result of careless handling of highly poisonous spray materials. Accidents to vegetable growers were largely fires in barns, storages or packing sheds. With the organization of Farm Safety Councils in most counties, a continuing program for safety can now be organized to reduce the toll of lives and property among rural people.

TOBACCO EXTENSION SERVICE

The program of the Tobacco Extension Service is designed to assist growers of flue-cured tobacco in Ontario. The Service maintains its headquarters at the Tobacco Sub-Station at Delhi in the heart of the tobacco growing area of the Province. It is the endeavour of the Tobacco Extension Specialists in their work with tobacco growers through programs and projects to reduce the cost of production, produce a high quality product and so improve the economic and social life of the tobacco grower and his family.

The Tobacco Extension Specialists were called upon to investigate a wide variety of problems during 1959. Disease, insect and fertility problems as usual provided the main difficulties although curing required much more attention than usual. As a result of the late crop, more growers have had their soil tested and sought information on fertilization for the 1960 crop.

Crop Conditions

The combined effects of weather and over-fertilization were mainly responsible for the development of a generally large, late maturing tobacco crop in 1959. As a consequence the frost in mid September destroyed approximately 12% of the crop. The average yield of 1306 lb. per acre in 1959 is about 200 lb. per acre less than that obtained in 1958. However, the above average quality produced and the excellent prices received have helped to compensate for the lower yield.

Greenhouse preparation and seeding were delayed in many areas, particularly Port Hope and Alliston, because of snow and cold weather in the latter part of March. Warm, sunny weather later in April and early May stimulated rapid growth with the result that in many cases plants were ready to set out into the field by mid May. A heavy frost on May 15 injured exposed parts of plants in the greenhouse and killed any plants that were in the field at that time. The remainder of the planting season was ideal and in most cases the plants obtained a good start. About the middle of June, however, high winds caused considerable damage on the lighter soils in all tobacco growing areas. Severe damage was encountered in the Alliston area.

There was very little rainfall during June and July. Many crops were irrigated 3-4 times which is more often than has been required during the past few years.

Heavy rainfall and hot weather during harvest caused excessive leaf and sucker growth. It was extremely difficult for many growers to obtain adequate help to sucker their crops and harvesting operations were frequently delayed so that the large growth of suckers could be removed. The large leaves, especially

from the bottom of the plant, were very difficult to cure during the hot, humid weather and considerable dead and rotted tobacco developed in the curing process. Heavier bodied leaves in the later primings were not so difficult to cure but they ripened rather slowly so that when frost occurred in some tobacco areas on September 16 and in all areas on September 17 a large amount of tobacco was destroyed. The loss from frost is estimated at approximately 20,000,000 lb. This combined with hail losses roughly estimated at 3,000,000 lb. and leaf spot damage, mainly from weather fleck, estimated at 2,000,000 lb. would account for the lower yield in 1959.

Insects and Disease

A period of cool cloudy weather just after the greenhouses were seeded made conditions favourable for the development of white mold growth on the seedbed surface. Numerous cases of this mold growth were investigated early in the season. While this white mold worried many growers, it caused little actual damage, and usually disappeared with the advent of warmer sunnier weather.

Damping-off was again the most serious seedbed disease. Each year many growers lose large numbers of plants through this disease. Outbreaks occurred fairly early in the season but losses were most severe as the plants neared the transplanting stage. The control measures presently being recommended for this disease are very ineffective, and it is felt that research should be initiated in an effort to discover a more satisfactory control for damping-off.

Many tobacco growers in the spring of 1959 changed from the standard method of steam sterilization of their greenhouse seedbed to sterilization of the seedbed with chemicals. Vapam and AA-50 were the chief chemicals used for this purpose. Considerable damage occurred to the germination and later growth of seedlings in greenhouses where Vapam was used. This material appears to be quite slow in coming out of the soil and therefore its use in the spring will not be recommended. Beds treated with AA-50 looked quite good, although weed control was possibly not as good as would be obtained with a thorough job of steaming.

Other greenhouse diseases such as "yellow patch" and black root rot were of minor importance.

Insect problems in the greenhouse were also of minor importance. There were a few cases of cutworm damage and one or two of grasshopper injury. Losses in these instances were quite small as the immediate application of the proper insecticides gave good control.

Field

Many growers in the area near Lake Erie sustained quite severe losses from weather fleck leaf spot again this year. The overall damage from this disorder was not as heavy as in 1957 but was more severe than 1958. Growers in the areas most severely hit were forced to prime the leaf, before it was fully matured, to prevent excessive leaf loss from this condition. When leaves are heavily attacked by weather fleck they become worthless and are therefore not primed. With less severe attacks the leaves may be primed but losses occur through lack of weight and poor grades on the market. It is estimated that this disorder cost the tobacco growers about 1-2 million dollars last year.

Brown root rot, a serious problem on some farms in 1958, was not of major concern. It is believed that the warm spring and fairly dry growing season was unfavourable for a large nematode population build-up and so damage was not as serious as it might have been. About 400-500 acres were soil fumigated with either Telone or D-D in an effort to control nematodes and get rid of the brown

root rot condition. While the full effect of soil fumigation on the following tobacco crop has not been completely determined as yet, it appears that spring fumigation before the tobacco crop gives the best results. In one or two cases where fumigants were applied in the fall the harvested tobacco was of inferior quality. This was especially true where ammonium nitrate had been used on the rye straw.

The virus disease mosaic was more prevalent than usual last year. Losses however, were quite small and were confined to parts of fields on scattered farms. There appeared also to be more frenching of tobacco last year than in previous years.

Other leaf diseases such as, brown spot, frog-eye and on-parasitic leaf spot, were present and appeared mainly on the lower or poorly drained soils of the farm. Losses again were of a minor nature.

The majority of insects that attack tobacco are fairly well controlled by the insecticides presently being used. The Seed Corn Maggot, however, which first caused damage to the newly set tobacco in the spring of 1958 caused much more damage in 1959 and over a wider area. Outbreaks of the insect were reported from all sections of the New Belt including east Elgin County, Middlesex County and the Burford area. Early plantings were hit to a greater extent with attacks being much less severe after June First. Lindane as a planting water treatment (normally used for wireworm control) was found to be ineffective against the Seed Corn Maggot. Later in the season the wettable powders of alrin dieldrin and heptachlor were used as an alternative to lindane. However, due to a decrease in the number of maggots at this time of year (transformation of maggot to pupa state) it was impossible to determine the effectiveness of the later materials.

There were a number of inquiries and requests for farm visits concerning cutworm damage after planting. It is believed that the increase in cutworm damage may have been due to improper application or insufficient insecticide being applied.

Aircraft have been used for a number of years for applying insecticides to the tobacco crop. They are used mainly in applying endrin and DDD for the control of hornworms. It is estimated that about 50% of the farms employ aircraft to apply these materials. Insecticides are applied as both sprays and dusts, although the trend would appear to be toward sprays.

Marketing

In April 1959 the Directors of the Ontario Flue-cured Tobacco Growers' Marketing Board voted in favour of a 25% acreage reduction applied to all of the basic allotment except the first 6 acres on each farm. With the reduction it would have been possible to grow 117,600 acres but the actual planted acreage fell short of this by 6,376 making a total of 111,224 acres of flue-cured tobacco grown in 1959.

The Board passed a resolution in May 1959, which permitted the identification at selling time, of tobacco treated with maleic hydrazide. This action was undoubtedly prompted by unpleasant experiences in selling the previous crop of which about 80% had been treated with this sucker inhibiting material. Buying companies had also voiced their disapproval of maleic hydrazide because of its detrimental effects on quality. To determine where this material had been used, it was necessary for inspectors to examine tobacco crops on all farms. As a result only about 1% of the 1959 crop was treated with Maleic Hydrazide.

Price negotations with the buying companies began early in October. However, a settlement could not be reached and arbitration was necessary. Again, as in 1958, minimum grade prices were established with no allowances for tieing and grading.

The market opened on November 24 and unlike previous years, continued to remain open until the crop had been sold on March 11. Prices were generally good with sand leaves and tied to bacco bringing exceptionally good prices. The average price for loose to bacco was 55.84ϕ per lb. while tied to bacco averaged 61.52ϕ per lb. To bacco treated with maleic hydrazide averaged 45.69ϕ per lb. as compared to untreated to bacco which averaged 56.25ϕ per lb. The overall average price per lb. for the 1959 crop is 56.14ϕ with a total poundage sold of 145,206,260.

General Tobacco Extension Work

Tobacco, being a very highly specialized crop to produce, has many problems involved in its culture and the growers turn to specialists for information and advice. The grower cannot afford to make any mistakes or his returns for the season can be seriously reduced. The desire by growers for information is shown in that over 1,100 persons visited the Tobacco Extension Specialists for information of one kind or another. Many problems must be observed on the farms and this requires many farm visits.

Besides demonstrations, extensive use is made of press, radio and television for the dissemination of information.

Demonstration Projects

Four demonstration plots were planted last year; three in the Port Hope area and one in the Alliston area. Each plot was located on a different soil type and consisted of 6 varieties and 12 fertilizer treatments comparing the effects of various levels of nitrogen, phosphate, potash, calcium and magnesium. A twilight meeting was held in each area just before harvest.

Research Projects

The Tobacco Extension Service co-operated during 1959 with research personnel on the inter-service committees investigating weather-fleck leaf spot of flue-cured tobacco and insecticide injury.

Irrigation

Sprinkler irrigation is widely used in the production of flue-cured tobacco in Ontario. It is estimated that approximately 70% or 3,000 of the flue-cured tobacco farms in Ontario are now equipped to irrigate when the need arises.

Three to four irrigations were required during the extremely dry 1959 growing season. Irrigated crops appeared to mature earlier than those receiving no supplemental water.

Soil Testing

Soil samples from tobacco fields are sent to the Soils Department at Guelph to be analyzed. The results of the analyses are returned to this office where fertilizer recommendations are made. Approximately 331 soil reports were processed by this office. A number of recommendations are made by mail but when necessary the results are discussed personally with the grower as it is felt that more reliable recommendations can be made in this way. During the year 1,200 soil sample boxes were distributed.

Farm Business Management

Headings in the standard farm account book have been revised to make the book suitable for tobacco. A few of the books have been distributed to tobacco growers.

Some members of the Bayham Junior Farmers have account books and have kept financial and labour records throughout the past year. This group received assistance and advice, in farm accounting, from the Farm Economics and Statistics Branch.

Farm Accident Survey

At the start of the survey tobacco extension specialist selected township chairmen for two townships in Norfolk county. The township chairman received help in the selection of accident reporters.

The most damage on flue-cured tobacco farms appears to be caused by kiln and packbarn fires. According to the survey 65 kilns were destroyed by fire in 1959. The Ontario Flue-cured Tobacco Growers' Marketing Board estimate that 1,700,000 lbs. of tobacco has been burned in packbarns. This plus an approximate loss of 130,000 lb. in kilns represents a loss of over \$1,000,000 in tobacco alone.

4-H Club and Junior Farmers

The Tobacco Extension Service assisted in the formation of the first 4-H Tobacco Club in Ontario. It is sponsored by the Langton Agricultural Society and was organized under the direction of Mr. Roy Richards, Associate Agricultural Representative for Norfolk County. Meetings covered such topics as Greenhouse Management, Fertilizers, Topping and Suckering and Irrigation, etc. The material for the majority of meetings was provided by the Tobacco Extension Service.

HOME ECONOMICS SERVICE

The objectives of the Home Economics Service are (1) to bring to the women and girls of rural Ontario a program of practical home economics education which they can apply directly in their responsibilities as homemakers, (2) to encourage them to help themselves, and to develop their own leadership.

In planning the program an effort is made to keep up-to-date with the new trends in home economics and to maintain the standards and skills that are basic to homemaking at any time.

Survey of Farm Homes and Homemakers

A special feature introduced this year was a co-operative Study of Farm Homes and Homemakers, by the Home Economics Service of the Ontario Department of Agriculture and the Rural Sociology Unit of the Economics Division of the Canada Department of Agriculture. This survey is the first intensive study of its kind to be conducted in Canada. It is directed by Dr. Helen Abell, working with members of the Home Economics Service staff.

During the month of July the County and District Home Economists conducted personal interviews with 352 Ontario farm homemakers. One half of these rural women were active members of a Women's Institute; one half were non-members. They resided in every country and district of Ontario.

Two progress reports have been prepared by Dr. Abell with the co-operation of staff of the Home Economics Service. The first report dealt with findings concerning home and farm labour saving equipment, the level of living of farm families and data pertaining to textiles and clothing. The second report provides information of particular interest to persons concerned with rural youth programs. Subsequent reports will deal with other phases of farm homemaking and rural living.

Regarding the relation of the survey to our extension service:

It was found that over half the farm homes surveyed have been standing for over 50 years, which indicates the need of providing guidance in repairing, remodelling and building.

The Clothing survey showed that 80% of the women interviewed reported buying material and doing home sewing and that they get most of their information on textiles from sales people rather than from more informed sources. Also, two-thirds of the women expressed a desire for help in overcoming their difficulties in buying textiles. This gives guidance for the clothing program.

The survey also shows such facts as that approximately 80% of Ontario farm families are drinking raw milk; that on 78% of the farms where there are children the children drive tractors and that 84% of the boys driving tractors are 12 years old or under.

All the findings of the survey to date indicate that there is a great need not only to develop an awareness of commendable practices but to assist people in adopting these practices in their homes and on their farms.

Consumer Information Service

A new extension service, Consumer Information, was set up under the direction of Miss Ruth Moyle, formerly Consumer Consultant with the Canadian Broadcasting Corporation. The need of such a service for rural women was evident in their interest in the work of the Canadian Association of Consumers and in their requests for information from our office.

Ten tape recordings are made each month for distribution by the Information Branch to 30 Ontario radio stations. A Consumer Information column is presented in the periodical Home and Country, published by the Ontario Department of Agriculture in the interests of the Federated Women's Institutes of Ontario.

Local Leader Training Schools

The local leader training schools introduced two years ago have continued to bring an increasing number of women into participation in the extension program. At the same time local leaders have been developed and original ideas and resourcefulness have been stimulated in both leaders and members.

The extension program was broadened this year by the introduction of a new project in each of the following sections of the service: Food and Nutrition, Clothing and Textiles, Home Furnishings, Home Crafts and Health Education, in addition to the projects offered last year.

Projects	Training Schools for Leaders		Women Taking Project
The Third Meal	8	65	978
Dairy Food Facts	0	0	0
Sew to Save		195	1294
Focus on Finishes	16	119	879
New Lamps for Old	8	53	500
Window Treatment		27	265
Rug Making	18	107	212
Block Printing	0	0	0
Hints for the Home Nurse	4	29	311
Safety Begins at Home	0	0	0
Totals	79	595	4439

Courses and Conferences

Courses and Conferences ranging in length from one to five days were given by the field staff. The classes were mostly organized by the local Women's Institutes but were open to all the women of the community. The courses dealt with Food and Nutrition. Clothing and Textiles, Home Furnishings, Home Crafts, Health Education, Cultural Activities and Women's Institute Procedures. The accompanying tabulated summary gives the subjects of the courses in each of these sections, the number of courses and the attendance.

Courses			
	Number of		Average
Subject	Courses	Enrolment	Attendance
Hospitality Foods	35	1,121	32
Sandwiches for all Occasions	32	1,166	36
Salads	12	307	25
Catering for Crowds	25	586	23
Meals and Money	3	61	20
When Food Makes a Difference	14	292	21
Modern Methods of Food Preparation	4	75	19
Choosing and Using Fabrics	27	528	20
Something to Wear	35	740	21
Dress Finishes	6	83	14
Millinery	109	1,516	14
Treasures in Your Attic	12	256	22
Brighten Your Home With Colour	5	105	21
Tailored Slip Covers	2	16	7
Curtains and Draperies	1	17	9
Needlework	11	139	11
Leather Craft	17	165	12
Leather Gloves	34	200	9
Moccasin Making	10	68	11
Textile Printing	-		
An Ounce of Prevention	2	36	18
Home Care of the Sick	14	480	12
Medicine — Yesterday and Today	4	84	21
How to Conduct Meetings	10	190	19
What Makes a Good Officer	2	39	20
Programme Planning	14	195	14
Aids to Effective Speaking	29	432	15
Drama, Books and Reading	7	93	13
Tweedsmuir History Workshops	41	387	9
Totals	517	9,377	

Miscellaneous Meetings

Special addresses and demonstrations were given in co-operation with the Agricultural Representatives and various branches of the Department of Agriculture. Staff members gave special talks and demonstrations at Women's Institute Conventions, conferences and meetings of the Women's Institutes of the province.

The Foods and Nutrition section staff prepared and presented a skit on Nutrition at the Women's Institute Officers' Conference, gave 13 live and 4 taped interviews on radio, acted as judges at the College Royal at Guelph, led a discussion group at a Food Editors' Conference and assisted at a "Frozen Foods School".

Circulars and Bulletins

Bulletins issued by the Branch are in great demand by Women's Institute members and others who get them from the office of the Agricultural Representatives. A great many requests from High School Teachers and Medical Health Officers are also received.

Home and Country

Home Economics Service takes responsibility for the publication of the Women's Institute paper, "Home and Country". The purpose of this publication is to encourage good programs, policies and projects in the Institutes and to keep the Institute members informed about the extension service. Three issues, each running to 47,000 copies were published this year, the branch Institutes distributing copies to their individual members and several copies going to key people in other provinces.

The Loan Library

The Loan Library is a mailing service providing source material for the programs of Women's Institutes or other organizations. It also helps women with homemaking problems. The loan material is sent upon request in the form of mounted bulletins, papers, clippings and Study Kits.

During the past year 2,311 requests for literature were filled and accompanying letters sent. The distribution involving 14,161 folders was as follows: Agriculture and Canadian Industries 2,905; Citizenship and Education 2,524; Public Relations 834; Historical Research and Current Events 884; Home Economics and Health 3,160; Miscellaneous 3,418; Women's Institute 1,229; and Resolutions 107.

Loan Library Study Kits are designed for those Institutes or individuals who desire longer loan periods for extensive study. These relate to culture, crafts and homemaking. Since April 1,1959, 226 Study Kits with accompanying letters were mailed. The distribution was as follows: Felt Work 39; Millinery 72; Etched Aluminum 25; Household Linens 6; Canadian Women 12; Canadian Art and Artists 18; Conservation 3; Associated Country Women of the World 3.

Applications for Letter Friends totalled 753. These were forwarded to the Letter Friend Secretary of the Associated Country Women of the World.

EXTENSION WORK WITH JUNIORS

County and District Home Economists

Home Economics extension work is directed in the field by County or District Home Economists. Twenty-three full time Home Economists were engaged in this work this year and every county or district in the province had the service, though in some areas the Home Economist had to divide her time among three or even four counties or districts.

4-H Homemaking Clubs

The 4-H Homemaking Club Program for girls and young women, twelve to twenty-six years of age, is planned to give training in home economics, to provide an opportunity for continuous growth and development through participation in educational programs, to encourage satisfaction in achievement and an appreciation of rural living, to develop leaders and to promote intelligent, responsible citizenship.

The County and District Home Economists direct the Homemaking Club Program in their respective territories. They conduct local leader training schools, visit clubs, hold achievement days and assume responsibility for special club programs at fairs, conventions and conferences. Over 2,575 local leaders and assistant leaders attended two-day training schools.

Reports indicate that interest of senior club members was maintained in spite of busy school days and girls leaving home for further studies and work. Here

and there young mothers of club age continued their membership since they find club experience assists them in meeting family needs.

Units	Training Schools for Leaders	Number of Clubs	Number of Members
Food and Nutrition Clubs	43	409	3,902
Clothing Clubs	46	425	3,850
House Furnishing Clubs	17	161	1,400
Hospitality Clubs	15	176	1,894
Home Defense Clubs	11	84	817
4-H Home Garden Clubs		127	1,123
Total	145	1,382	12,986

Local Leaders Recognized

Arrangements were made and programs planned for experienced local leaders of 4-H Homemaking Clubs to visit the Royal Winter Fair as guests of the Ontario Department of Agriculture. While over 550 leaders were eligible, having led two clubs during 1958 and 1959 and not having had two previous trips, only 254 were able to take advantage of trips because of home responsibilities.

Luncheons were arranged for one day of the training school for 2,370 leaders.

Juniors at Fairs

Some 672 club members took part in the 4-H Homemaking program at Central Canada, Canadian National Exhibition, Western Fair, Peterborough Exhibition and Lakehead Exhibition.

At Central Canada, members live in club camps and follow a two-day program. At the Canadian National Exhibition they have a three-day program and are given accommodation for two nights at a University Women's Residence. At Lakehead Exhibition they also have a three-day program with overnight accommodation.

At Stratford, Belleville, Owen Sound, Teeswater similar one day programs were featured with 195 individuals taking part. Over 400 educational exhibits on 4-H Homemaking Club exhibits were placed by Junior Institutes, Farm Girls' Clubs and 4-H Homemaking Clubs at 35 class "B" Fairs. These exhibits were arranged in co-operation with county and district Home Economists.

Pins, Certificates and Spoons

County Honour pins and certificates were presented to 905 members who completed six 4-H Homemaking Club units. Provincial Honour Certificates and pins were awarded to 193 members who completed twelve units. National 4-H Council certificates were presented to 77 local leaders completing five years as club leader. A 4-H Homemaking Club sterling silver spoon was presented to each leader and assistant leader and to members who completed their work satisfactorily.

National Club Week and Provincial Girls' Conference

Seven senior members were selected from Cochrane South, Grey, Hastings, Lincoln, Perth, Thunder Bay and York 4-H Homemaking Clubs to represent Ontario at National Club Week.

The Sixth Provincial Girls' Conference for 4-H Homemaking Club members was held at the Ontario Agricultural College in June. Every county and district was represented by 197 experienced club members selected on the basis of achievement and service to their clubs.

Junior Institutes

Junior Institutes, Farm Girls' Clubs and rural young women associated with the Junior Farmers' Association, continued to cooperate with Women's Institutes and Junior Farmers in planning and carrying on programs concerned with home and family life, agriculture, community living and citizenship. They gave leadership in sponsoring 4-H Homemaking Clubs and with Junior Farmers held Field Days, Sunday Services, Choral Classes, Debates, Public Speaking, Farm and Home Safety Projects and a Provincial Leadership Training Camp. They attended Junior Farmer Conferences in Toronto, Kemptville, Guelph and five one-day leadership training schools.

Eighty program kits were used by various groups in preparing monthly programs. Several clubs have used film strips on Family Living available from the Home Economics Service.

Scholarships

Experienced club members received various Women's Institute scholarships which gave them financial assistance for some educational purpose—The Dorothy Futcher Ontario Women's Institute Scholarship, The Ontario Women's Institute Scholarship, two area scholarships and 16 county and district scholarships. The number of county and district Women's Institute scholarships is steadily increasing.

Exchange Visits

Members entertained in their homes overseas visitors from the Scottish Association of Young Farmers' Clubs and the National Federation of Young Farmers' Clubs in England and Wales. Two senior 4-H Homemaking Club members were included in the party of four juniors on the Ontario Department of Agriculture Travelling Scholarship to Great Britain.

Federated Women's Institutes of Ontario

The Extension Branch, Home Economics Service works closely with the Federated Women's Institutes of Ontario and the Director sits on the Provincial Board as an honorary member. At the annual meeting of the Federated Women's Institutes of Ontario Provincial Board, Mrs. L. G. Lymburner, Port Colborne was elected President and Mrs. G. Holder, R.R. 1, Mono Road was elected Secretary.

The establishment of the F.W.I.O. office, in the same building as the Home Economics Service headquarters, has made it very convenient for the Director to work with the provincial executive in matters involving extension service or other business where both offices are concerned.

The Federated Women's Institutes of Ontario held conventions in 14 areas of the province last year with a total attendance of 4,687; an annual Officers' Conference at Guelph attended by nearly 850 women; and 200 at the Women's Institute Holidays at Guelph and Kemptville. Staff members assisted with the conference and holiday programs.

The Federated Women's Institutes of Ontario had a tent at the International Plowing Match and a booth at the Royal Winter Fair.

Branches and Membership

Number of Senior Women's Institutes in Ontario, March 31, 1960 1,423 Number of Junior Women's Institutes in Ontario, March 31, 1960 45 Total Number of Women's Institutes in Ontario, March 31, 1960 1,468 Membership, March 31, 1960 39,786

Of the 8 Institutes organized, all were Senior.

Of the 16 Institutes disbanded, 9 were Senior and 7 were Junior.

The newly-organized Institutes were:

Algoma Centre - Good Will Bruce East - Gillies Hill Carleton East — Cedardale Grey West — North Derby
Lanark South — Harper
Nipissing — Gateway
Simcoe West — Sunniwood York North — Egypt

The Institutes which disbanded were:

Brant South — Sour Springs Junior — Kincardine Junior

Cochrane North — Frederickhouse, Island Falls
Elgin East — East Elgin Junior
Frontenac — Kingston Junior Frontenac — Kingston Junior
Grenville South — Spencerville
Haldimand East — Dunnville - Ear Falls Kenora Kenora — Ear Falls

Kent West — Charing Cross

Lambton Centre — Moore Township Junior
Lambton North — Point Edward
Lambton South — Dawn Junior, Sombra Township Junior

York North — Elmhurst Beach - Eatonville York West

Legislative Grants

To districts \$5,480.00; to convention areas \$1,145.00; Total \$6,625.00.

Farm Economics and Statistics Branch

The Farm Economics and Statistics Branch is concerned with the business aspects of farming in Ontario. Its duties include the compilation of Agricultural Statistics, conducting economic studies of any factor affecting farm earnings, analysing the information obtained, publishing reports and otherwise making its findings available to those who can make beneficial use of the information.

Rapid, and often drastic, adjustments in the agriculture of the Province have greatly increased the need for information on which farmers, farm organizations and others interested in farm output may base their production and marketing decisions. The Branch is steadily accumulating this type of information and keeping it as up-to-date as possible.

General agricultural statistics are published yearly, and seasonal reports are published on Crops, Livestock and Fruits and Vegetables.

Cost studies have been completed on most of the cash and feed crops commonly grown in Ontario. Yearly cost reports are available on dairy production and studies have been made of several livestock enterprises. Information from these studies supply much basic information for farm management decisions. Many marketing studies have been completed and more are in progress. Some investigation has also been made into land use, causes of farm abandonment, farm title transfer, etc.

During the year eleven completed studies were covered by published reports and 21 major studies were in progress.

Requests for lectures, special reports, individual advisory services, etc., continued to expand. Farm management services to individuals and to groups showed a particularly impressive increase during the year.

The very nature of farm business makes adjustment a continuous process over a period of years and also requires a considerable time before improved practices are reflected in substantially improved earnings. Available information must be fully considered in the light of conditions on the individual farm; changes in crop and livestock production are often a developing process; extra capital acquired is normally a problem; changes in land holdings can be difficult and new techniques cannot be learned over-night.

During the last five years, members of the Branch staff have assisted at farm management schools in almost every county, they have conducted several training schools for extension personnel, they have discussed research findings at meetings of all D.H.I.A. groups and they have given personal advice to hundreds of individual farm operators. Directly and indirectly this has supplied a great deal of information on which the farmer can base his farm business planning.

The result of this type of work over a period of years is seen in definitely improved average earnings enjoyed by D.H.I.A. members. In the five years from 1955 to 1959 inclusive, the average earnings of these 1,200 dairy herds improved from a net return of \$246 per herd to \$1,967. This improvement occurred during a period when the prices of goods and services used by farmers increased 15 per cent and the prices received for milk improved only 10 per cent, and when the average earnings of Ontario farmers as a whole were declining.

This improvement came from a drop in average cost of milk production from \$3.47 per hundredweight to \$3.05. It was accomplished with the following changes in management:

- 1. Average milk production per cow rose 950 pounds.
- 2. Average feed cost per hundredweight of milk dropped 5¢.
- 3. Average man hours per cow were lowered from 180 hours to 84 hours.
- 4. Average milk sold per \$100 dairy investment rose from 14 to 15 hundred-weight.
- 5. Average cows per herd rose from 19 to 23.

FIVE YEARS OF PROGRESS IN D.H.I.A.

		1955 (1109 herds)	1959 (1250 herds)	Gains
Net Returns per Herd	\$	246	1,967	1,721
Returns per Hour of Labour	\$.88	1.84	.96
Production per Cow	lbs.	8,300	9,250	950
Feed Cost per 100 lbs. Milk	\$	1.65	1.60	.05
Lbs. Concentrate Fed per Cow				
Equivalent	lbs.	1,531	1,853	
Lbs. Milk per Lb. Concentrate Fed	lbs.	5.4	5.0	
Man Hours per Cow	hrs.	108	84	24
Man Hours per 100 lbs. Milk	hrs.	1.3	.9	
Cwts. of Milk Sold per \$100 Dairy				
Investment	cwts.	14	15	1
Milking Cows	no.	19	23	4
Average Price Received per Cwt. Milk	\$	3.64	3.99	10% Price Increase
Cost per 100 lbs. Milk	\$	3.47	3.05	12% Cost Decrease

As in former years, the Branch must record its appreciation of the full cooperation of almost 2,000 growers of the various crops and livestock under special study. These farmers freely revealed their costs and also gave freely of their time so that the fieldmen could obtain full and accurate records.

The Branch also received the fullest co-operation of the various departments at the Ontario Agricultural College and of the other Branches of the Department, all of whom must be consulted regularly on technical production and marketing problems. The co-operation of the Agricultural Economics Department at the Ontario Agricultural College is a particularly close one and is formalized in the Agricultural Economics Co-ordinating Committee which meets regularly to consider mutual programs and interests.

The work of the Branch during the year, in greater detail, follows:

- A. Statistics Section.
- B. Research Activities.
- C. Communication Activities.

STATISTICS DIVISION

The Statistics Division of the Branch is responsible for the collection and publication of statistical data on all phases of agricultural activity in the Province. Close collaboration in this work is maintained with the Agricultural Division of the Dominion Bureau of Statistics in order to obtain uniformity in agricultural statistics across Canada, to ensure efficiency and economy of operation, to prevent duplication of effort and to secure the most effective use of trained personnel.

Statistics compiled on a monthly, semi-annual and annual basis are published in one of four regular reports issued for the use of the public and mailed, free of

charge, to anyone asking to have their name and address placed on the mailing list. These are the Monthly Crop and Livestock Report, the Monthly Dairy Report, the Seasonal Fruit and Vegetable Report, and an Annual Report entitled "Agricultural Statistics for Ontario" which brings together on a yearly basis the important figures on the various branches of agriculture covered more frequently in the three previously mentioned monthly reports.

The Monthly Crop and Livestock Report is published monthly from May to January inclusive, and contains data on a County basis relating to the acreage of field crops, progress of seeding, conditions affecting development during the growing season, estimates of preliminary and final yields, numbers of livestock on farms at June 1st and December 1st, and price data prevailing for agricultural products.

The Monthly Dairy Report, together with a March Supplement was extended at the request of the dairy industry, and now contains very complete statistics relating to all branches of dairying. Each month's edition of this report includes tables showing, by size and type of container for 36 milk markets into which the Province has been divided, the sales of standard, special, partly skimmed and skimmed milk, buttermilk, chocolate dairy drink, cereal, table, whipping and sour cream, and purchases by commercial dairies from farmers for the same 36 milk markets of the quantity and cost of fluid milk and secondary milk. Other tables show the production of concentrated milk products, the average monthly wholesale price and cold-storage holdings of butter and cheese, the price being charged to farmers for dairy feed stuffs at London and Ottawa, and the production, by County, of creamery butter and cheeder cheese.

The Seasonal Fruit and Vegetable Report contains information on the acreage, development during the growing season, quantity of produce harvested, market conditions and estimates of the yield and farm value of fruit and vegetable crops grown in Ontario. Purchases of Ontario grown fruit and vegetables by processing firms in this Province are published in the April monthly issue.

For fruit and vegetable statistics, the Province is divided into 14 regional areas, with each of these sections having a small Statistics Committee consisting of Dominion, and Provincial Government officials who meet on the 15th of each month to make up a report on growth and production prospects for the respective areas. From these statements a general report is then prepared for consideration and approval of the Ontario Fruit and Vegetable Statistics Committee, which again is composed of staff officials of the Ontario Department of Agriculture, the Fruit Division of the Canada Department of Agriculture, and the Agriculture Division of the Dominion Bureau of Statistics.

Approximately 80,000 schedules are used each year in the compilation of agricultural statistics for Ontario. These schedules are filled in by approximately 8,000 Ontario farmers, the agricultural representatives and other Government fieldmen, Marketing Boards and various types of commercial firms engaged in the handling, processing and marketing of farm products. This Department wishes to gratefully acknowledge the assistance of all these persons in obtaining timely and accurate agricultural statistics.

In 1959, farm cash income from the sale of farm products in Ontario was slightly lower than the record set during the preceding year. The figure for 1959 is now estimated at \$867,302,000 as compared with \$872,282,000 in 1958 and \$709,199,000 in 1957.

Figures for estimated cash income and total net income of farmers in Ontario annually from 1926 to 1959 are shown in the following table:

CASH INCOME FROM THE SALE OF FARM PRODUCTS AND TOTAL NET INCOME ONTARIO, 1926 — 1959

Year	Cash Income	Net Income	Year	Cash Income	Net Income	Year	Cash Income	Net Income
	\$	\$		\$	\$		\$	\$
1926	245,868	148,513	1937	201,912	110,401	1948	650,290	366,693
1927	246,443	154,316	1938	201,156	109,496	1949	652,269	352,929
1928	259,610	155,579	1939	208,974	115,102	1950	650,083	336,637
1929	256,832	150,234	1940	215,774	113,837	1951	800,666	431,172
1930	213,471	128,459	1941	274,503	146,260	1952	770,675	431,715
1931	171,004	80,534	1942	357,848	228,239	1953	749,106	378,618
1932	131,472	50,560	1943	389,083	201,393	1954	726,397	295,040
1933	135,901	50,234	1944	410,710	253,307	1955	766,237	332,457
1934	149,922	79,024	1945	442,625	250,995	1956	780,551	313,026
1935	160,897	84,488	1946	461,733	255,706	1957	789,337	330,223
1936	176,532	83,597	1947	535,194	276,650	1958	872,282	381,043
						1959	867,302	325,212

RESEARCH ACTIVITIES

A major duty of the Branch is to study all business aspects of farming in the Province and to issue reports of the findings of these studies. This research program was continued during the year on a fairly extensive scale.

Each study seeks factual information on some particular feature of Ontario's complex agriculture and practical findings from an analysis of the data. Some of the necessary information is available in secondary sources like the Census, Market Reports, etc., but normally extensive and detailed field surveys are required—often extending over a period of years.

Completed studies are reported to all interested parties and in the case of general interest, a report is published.

Reports Published During the Year

- 1. Ontario Farm Management and Accounting Report. O.D.A. Circular #315, by J. H. Clark, and Dr. H. W. Caldwell.
- 2. Significant Tables from D.H.I.A. Records, 1958, by Frank Barnes. Some of this information was also published in the Dairy Herd Improvement Association Progress Report, 1958.
- 3. Beef Mixed-Farms, Output and Management by J. B. Nelson. A synopsis of this report was published as O.D.A. Circular #353.
- Early Potato Production Costs and Management by J. B. Nelson and F. R. Abraham.
- 5. Dairy Production Costs, Returns and Management, 1952-1956, by J. H. Clark.
- 6. Marketing Niagara Peninsula Fruit by H. H. Weijs.
- 7. Preliminary Report on Trends in Dairy Production and Prices by E. A. Haslett and W. G. Fulton.
- 8. Costs and Returns to Dairy Producers in D.H.I.A. by W. G. Fulton.
- 9. Inter-Provincial Competition in Dairy Products by W. G. Fulton.
- 10. Submission to Agricultural Marketing Enquiry Committee re Branch Research and Marketing by E. A. Haslett, et al.
- 11. Potato Transportation Costs by S. de Szoeczy and Dr. H. L. Patterson.

Studies in Progress

Dairy Herd Improvement Association Project

More than 1,200 detailed dairy herd cost records are available each year for summary and analysis. This forms the best known body of dairy cost information and is the basis for many useful annual reports that have wide demand.

The importance of dairying in Ontario makes this material the basis of much Farm Management extension.

Farm Account Project

This project carried on in co-operation with the Department of Agricultural Economics at the Ontario Agricultural College provides more than 400 complete farm records each year for study and analysis. These records provide up-to-date data on all types of farm operations in the Province.

Yearly reports on this project have wide circulation and are particularly valuable in showing cost and earning trends and current comparisons of different types of farming.

Studies of Livestock Enterprises

a) Swine Production Costs and Management.

b) Finishing Steers on Grass—with and without grain.

c) Wintering stocker calves and yearlings.

d) Cow and calf enterprise—producing feeder calves.

e) Beef Production—Cow and Calf—Purchased Calves—Purchased Yearlings.

f) Efficiency of Pen-Type Barns.

Production Costs and Management — Feed Crops

a) Hay.

b) Spring Grain.

c) Grain Corn in Corn Zone 4.

Production Costs and Management — Cash Crops

a) Apples.b) Grapes.

c) Soy Beans.

d) Sugar Beets.

e) Grain Corn in "Corn Belt".

Marketing Studies

1) Price Margins of Selected Ontario Farm Products.

2) Apple Marketing.

3) Analysis of Dairy Industry Statistics.

Miscellaneous Studies

1) Changes in Occupied Farm Land.

2) Returns from Tile-Drained and Undrained Land.

3) Land Use Changes in Selected Townships (Social Aspects).

4) Pasture Farms.

COMMUNICATION ACTIVITIES

Agricultural statistics and the findings of farm economic studies are of little practical value until they are communicated to farmers and others who can use them in their production and marketing activities. As the body of farm business information expands its potential usefulness steadily increases and the Branch staff is increasingly concerned with the best and most acceptable communication of this information.

This communication takes the form of published reports of various kinds, press releases, public addresses, personal consultation with individuals and organizations, and particularly by providing expert consultants, lecturers and program material to the Extension services of the Department.

Published Material

On the completion of major studies, a complete report is published and distributed to all workers in the field, to co-operating growers and their organizations and to other interested parties on request. For those interested only in the main findings, a short summary is usually published in sufficient quantities for general distribution.

When a study is to continue for several years, interim reports are issued at regular intervals to co-operators and others particularly interested. At the same time, all co-operating growers are supplied with detailed reports of their own operations which were part of the study.

The demand for these formal reports amounts to many thousands each year and comes, not only from Ontario, but from all the other Provinces, Great Britain, Australia, New Zealand and many foreign countries.

Public Addresses

The Director and members of the Branch staff are in continual demand as speakers at meetings of farm and other organizations. These meetings give an opportunity to discuss the findings of studies carried on, the agricultural outlook, farm management, etc., as well as to explain to non-farm groups the general position of agriculture and its business problems.

During the year 118 such meetings were addressed ranging from local farmer organizations and service clubs to national conventions of major farm groups and an international convention of Rural Land Appraisers.

Consultant Activities

During the year members of the Branch staff experienced a substantially increased demand for consultation services from individual farmers and from farm organizations. This was chiefly evident in requests for advice on farm management problems, for information and advice to farm organization and for members of the staff to act as expert consultants on committees.

More than 200 individual farmers were given assistance in their farm business planning during the year in addition to many more whose business problems were discussed briefly at Farm Management Association and other meetings.

Many farm marketing organizations have consulted regularly with members of the staff.

Among the many committees using members of the Branch staff as regular consulting members are:

Conservation Council of Ontario.

Wetlands Sub-committee of the Water Resources Commission.

Egg Marketing Committee.

Early Potato Research Committee.

Fresh Peach Board Appraisal Committee.

Niagara Fruit and Vegetable Committee on Marketing Research.

These activities have become important methods of communication by which the findings of Branch research are made available to those who can use them.

Co-operation with Departmental Extension Services

The many implications of farm business problems are of increasing interest in extension programs. In some counties, local marketing problems have a definite place in those programs and in many counties farm management is taking a prominent position.

In these programs the research findings of the Branch supply basic extension material and procedures that are being widely used.

In the Extension Branch program in Farm Management this Branch cooperated by:

- Processing the Farm Account Books of members of County Farm Management Associations for all counties except one in which volume was sufficient for local processing.
- 2) Prepared Association summaries of these records.
- 3) Provided lectures for two local night schools.
- 4) Conducted a training school for agricultural representatives.
- 5) Provided speakers for 29 local Farm Management Association meetings.
- 6) Provided leaders for a Farm Management tour.
- 7) Prepared Farm Management material for use in several local associations.
- 8) Assisted with Junior Farmers' Soils tour.
- 9) The Branch provided technical assistance in the analysis of Farm Accident Survey Records.
- 10) The members of the Branch staff located at Guelph work closely with the Ontario Agricultural College staff and assisted with several projects.
 - i) Presented lectures on Farm Management to Diploma Course Students.
 - Lectured on Farm Budgeting at nine regional schools for Agricultural Lenders.
 - iii) Assisted with farm tour for bankers.
 - iv) Advised graduate students in hog and dairy studies.
 - v) Lectured on Farm Management at Course for Bankers.

Farm Labor Service Branch

The farm labour program in Ontario is under the supervision of the "Ontario Federal-Provincial Farm Labour Committee." Members of the Committee are appointed by the Minister of Agriculture in accordance with conditions set forth in the Farm Labour Agreement between the Government of Canada, represented by the Minister of Labour, and the Government of the Province of Ontario, represented by the Minister of Agriculture.

Members of Committee: 1959 - 1960

Dr. C. D. Graham, Deputy Minister of Agriculture for Ontario.

J. W. Temple, Ontario Regional Director, Canada Unemployment Insurance Commission.

W. Davison, Regional Agricultural Adviser, National Employment Service.

J. D. McFarlane, District Superintendent of Immigration, Canada Department of Citizenship and Immigration.

J. W. Drennan, Markets Branch, Ontario Department of Agriculture.

W. A. Montcalm, Extension Branch, Ontario Department of Agriculture.

R. G. Bennett, Chief Agricultural Officer, Ontario Department of Agriculture, Chairman.

The Committee concerns itself primarily with the formation of policies and procedures to be followed in the recruitment of farm labour. It is not active in the field of farm placement but works very closely with the Regional Office of National Employment Service in assisting with the general farm labour program and, in special cases, supplies additional personnel on a part-time basis to assist with farm labour placements at peak periods. This service is confined mainly to two areas: (1) the recruitment and placement of Day-By-Day labour in the fruit and vegetable growing areas adjacent to Toronto; (2) the placement of tobacco workers in the tobacco growing areas during harvest time.

The general farm labour situation in the province was about the same as in 1958 — although the tendency is for the situation to become more critical each year. Changing trends in our agricultural set-up, with a general tendency towards larger farm units, has stepped-up the demand for full-time married farm workers. Information indicates that all agencies active in the placement of farm workers have twice as many unfilled orders on their files as they are able to fill for this type of worker. The same could be said for single full-time workers.

Improved farm management practices; the trend toward greater specialization on many farms and the increase in mechanization, has done much to alleviate the labour shortage. Weather conditions, of course, play an important part in meeting man-power needs. Weather conditions in 1959 were quite variable throughout the Province. As a result considerable difficulty was experienced in harvesting in some areas.

Sugar Beets

Labour to assist with the blocking and hoeing of this crop again presented a critical problem in 1959. Arrangements were made through National Employment Service officials in the Province of Quebec, and also through the Quebec Federal-Provincial Farm Labour Committee, to recruit sugar beet workers in areas east of Quebec City.

A total of 288 men were moved from the Province of Quebec during the early part of June. For a number of reasons, difficulty was experienced in keeping these men on the job. The greatest single difficulty was brought about by the fact that abnormally high temperatures prevailed at the beginning of the blocking season, which was unusual for that particular time of the year. This, coupled with the fact that most of the men were unskilled in the art of sugar beet blocking, caused many to leave the job after a short period of time.

Flue-Cured Tobacco

The flue-cured tobacco crop in the Province requires perhaps the largest number of day-to-day labourers of any crop grown.

Here again weather conditions were responsible, in a large measure, for critical labour shortage—both at planting time and harvest time. Hot, dry weather near the beginning of the harvest season caused a delay in the main harvest operations as further irrigation was necessary. This affected the labour supply as large numbers of labourers reached the area at normal starting time but, because of the delay, had left the area when the main crop was ready to be harvested. Mainly through the efforts of National Employment Service, the Farm Labour Committee solicited the support of labourers in the Province of Quebec, a few in the Maritimes, and also in the States of Virginia, Georgia and Florida. However, the response here was not as great as it might have been because workers had either found other jobs or were reluctant to travel long distances for what might be a short working period. As it developed, this reasoning proved correct since killing frosts struck the tobacco area on September 16th, which was about two weeks earlier than usual. It should be pointed out, however, that with the later start with harvesting, and with the abnormally early shut-down because of the frost, no supply of labour would have been adequate to have harvested all the crop.

Tobacco harvesting is peculiar. The number of workers that can be used on a particular tobacco farm is determined by the physical set-up, the nmber of kilns, and the rate at which tobacco can be cured after harvesting. Most farms are equipped to handle a kiln a day; therefore, the number of frost-free days is of greater importance than the actual number of workers in the area. This is based on the assumption that each grower is able to recruit the number of workers his particular set-up requires—which was not possible in all cases this year.

The Committee is working very closely with the Ontario Flue-Cured Tobacco Growers' Marketing Board to institute new plans for the handling of labour in this area. The Committee employed three temporary Placement Officers in 1959, who placed a total of almost 8,000 workers in the area during the harvest period.

Day-By-Day Workers

This program again operated in expanded proportions in 1959.

At March 31, 1960, a total of 30,068 days work had been supplied through this arrangement, representing an estimated payroll of approximately, \$191,000.000.

As in past years, most of the labour was recruited for fruit and vegetable growers immediately west of Toronto. However, during this season demands were received from growers in the Bradford Marsh, north of Toronto, and a total of 18 growers in that area were supplied with workers—totalling 7,225 days. It is anticipated that the demand for Day-By-Day help for the Bradford Marsh will be more extensive in 1960.

The Committee arranges for insurance coverage on all workers who go out under this plan, premiums for which are paid by the growers who register for the service. Growers carrying Workmen's Compensation are required to include all their Day-By-Day workers in the coverage.

With a keen demand for labour in the Metropolitan area, it is anticipated this Day-By-Day service will continue to expand during the next few years.

STATISTICAL REPORT

	1959	1958
Total Farm Placements (to 31 December, 59)	20,510	15,636
Maritime Workers Brought to Ontario	446	262
Prairie Workers Brought to Ontario	44	88
U.S. Tobacco Curers Admitted to Ontario	2,046	1,964
U.S. Tobacco Tiers Admitted to Ontario	383	145
U.S. Tobacco Primers Admitted to Ontario	215	The same of
Day-By-Day Workers, West Toronto:		
Days work (1 April, 59—31 March, 60)	30,573	21,214
Workers Involved	748	636
Growers Served	83	64

Field Crops Branch

Total value of general field crops, excluding tobacco, in Ontario for 1959 exceeded three hundred million dollars. There was a decline of more than six and one half per cent, although only one half of one per cent was represented in volume of production, with more than six per cent due to decline in average prices.

Acreage of seventeen principal field crops showed little change at 7,857,000. Average yields were generally lower than the previous year, with twelve crops showing a decrease. Winter wheat showed the biggest decrease, with slightly over twelve million bushels harvested, or about one half of the previous year. Production of hay and fodder crops showed substantial gains.

Trends toward automation continue, with many labour saving devices now being used. Scarcity of farm labour has stimulated the rapid increase in mechanization. Loafing barns, milking parlours, manure loaders, self-feeding silos, and diesel tractors are now quite common being introduced in efforts to keep costs of production at a minimum. The same objective also includes production of maximum quantities of high quality home grown grains. Introduction of new varieties, improved production methods, and reorganization of farm enterprises have all assisted in the development of more efficiency. Yields per acre of all important crops increased by at least twenty per cent during this century, and the increase has been particularly rapid since World War II. A few crops have declined in importance.

From August 1, 1958, to July 31, 1959, a total of 1,042,594 tons of Western grain and mill feeds moved into Ontario under the Federal Freight Assistance Policy. This amounted to \$5,187,956.44 in freight assistance, as compared to \$7,446,339.00 in 1947.

Total cattle population reached an all time high with dairy cattle about the same as the previous year (1,007,000 head), and other classes showing an increase of 5.4 per cent at 2,042.000 head. However, the estimated number of swine was down 4.1 per cent and less by 16 per cent from the previous year.

In general, the policy of this branch has been to provide more economical crop production per acre, geared to the needs of a rapidly expanded population. In effect, this is being accomplished through co-operation with officials of institutions and other branches of the Department by educational methods through extension and promotion; by administration of policies and such legislative authority as the Weed Control Act.

Agricultural Limestone Assistance Policy

This policy, inaugurated more than twenty-five years ago, has been continued and periodically revised. Its usefulness and popularity have increased from 110 cars moved in 1936 to 120 cars with 4,919 tons, together with 35,318 tons by truck, or a total tonnage of 40,238 in 1959.

Subsidy paid in the fiscal year 1959-1960 amounted to \$69,852.71. This is on the basis of 75 per cent of reduced freight up to a maximum of \$2.50 per ton in Old Ontario and 75 per cent of the reduced freight to Northern Ontario. In the case of trucking, assistance at the rate of five cents per ton per mile to a maximum grant of two dollars per ton is provided for transportation from an approved source or distributing centre.

Kent County made most use of the policy, with total subsidy paid \$8,987.23. Sudbury District was second with \$6,068.81.

The policy is administered by the Agricultural Limestone Committee, under this branch, who accept responsibility for approval of production standards, keep abreast with demonstrations and the general practicality of this basic public service. During the year the entire policy was reviewed, resulting in a number of changes. These will become effective June 1, 1960. Method of application will be one of the major changes.

Seed Drill Survey

In the spring of 1959, 825 samples of cereals and small seeds were collected from the farmers of Durham, Hastings, Lennox & Addington, Northumberland, Ontario, Peel, Prince Edward, Peterborough, Victoria and York Counties and the Districts of Muskoka and Parry Sound. Approximately 50 cereal and 25 small seed samples were collected from each area and checked for weed content and germination. A questionnaire as to grade, source of supply, and method of cleaning was filled in with each sample. The main purpose is obtain a picture of the quality and varieties of seed used and to assist farmers themselves, seedsmen and extension workers. The province is divided into five areas for the survey. Each area is surveyed at five-year intervals.

COMPARISON OF FORMER ONTARIO SURVEYS

Year	Area	No. 1%	No. 2%	No. 3%	Rejected %	Treated %
1959	Central	59	11	12	17	63
1958	Eastern	49	10	10	31	37
1957	Southern	55	12	13	20	78
1956	Northern	53	12	10	25	19
1955	W. and S.W	59	12	9	20	69

This year's survey shows as high a percentage of No. 1 seed being used as ever before, and with the rejected samples being the lowest to date. Although the rejected samples represented 17 per cent of the total, only four were rejected for germination. There were, however, 31 samples that did not have sufficient germination to grade No. 1 (over 85 per cent for cereals and 80 per cent for small seeds). Of the lots rejected on weed content, some contained only four couch-grass or mustard seeds (limit of these primary noxious weeds in No. 3 Commercial seed is three), and other samples were really loaded with sufficient weeds to choke out an oat crop. One sample contained over 2,000 couch-grass seeds per pound plus over 2,000 other weeds, which would be sufficient to produce a complete crop of weeds alone.

Of the samples cleaned at a custom plant or purchased from a seed dealer 72 per cent graded No. 1, and 7 per cent were rejected. Farm cleaned samples split evenly at one third No. 1; one third No. 2 or 3, and one third rejected. Two out of three farmers did not have a No. 1 product to sow, and one half of them were actually sowing grain that should have been used for feed. Some farmers using farm size mills can produce as good a seed as a large plant, but the time used makes the operation unprofitable. Some farmers are still using screens which cleaned Beaver and Erban oats, but these are not satisfactory for Rodney and Garry.

MAJOR SEED SHOWS

For the second successive year the International Grain and Hay Show at Chicago was not held; hence Ontario growers were unable to vie for honours at this world recognized event. The Royal Agricultural Winter Fair provided top level opportunity for Ontario farmers to compete for world and international

recognition. They succeeded in winning 458 prizes in field crops. Major winners were as follows:

WORLD CHAMPIONSHIPS

Sovbeans	W. R. Beattie, Staples
Hav	Thos. S. Bowman, Stroud
Small Seeded Legume	Lt. Col. G. C. Reeves, Bath
Siliali Seeded Leguine	doi. d. d. Heeves, Battl

CHAMPIONSHIPS

Peas	George Neubauer, Hespeler
Beans	Robert P. Allan, Brucefield
6-Rowed Barley	Stoskopf Bros., Mitchell
Sweet Corn	Sylvester H. Brant, Picton

RESERVE CHAMPIONSHIPS

6-Rowed Barley	J. E. French, Mitchell
Beans	Harry N. Gorsline, Demorestville
Soybeans	
Alfalfa	L. Dixon, Mono Road
Timothy	
Rye	Harry N. Gorsline, Demorestville
Turning	Ise Richardson Walkerton

CANADIAN HORTICULTURAL COUNCIL DIPLOMA FOR MOST

OUTSTANDING COMMERCIAL DISPLAY OF

Potatoes	North	Simcoe	Potato	Growers	Assoc.
Turnips	Lewis	Thomso	on & So	ns, Embr	0.

THE ONTARIO SOIL AND CROP IMPROVEMENT ASSOCIATION

Now twenty-one continuous years of activity, the organization has 56 branches, with 1,232 officers and directors, 525 field projects, and 1,133 co-operators.

The fifty-six branches had total receipts of \$100,112.22 and expenditures of \$68,916.08, leaving a combined balance of \$31,314.72 to be carried over. Five branches had deficits. Average total receipts was \$1,787.71; average expenditures for each branch, \$1,230.64, leaving an average balance of \$559.19. For each dollar of grant made by the Department the branches spent \$2.67 on project work. Average number of officers and directors is 23. Average paid-up membership for 49 branches was 111, not including branches with one hundred per cent membership of all farmers in the county.

Total amount of grant available from the Department is \$400.00 per branch plus \$100.00 for seed fair. Average grant was \$386.19.

The provincial organization enjoys membership affiliation in or representation on such groups as Conservation Council of Ontario, Advisory Fertilizer Board for Ontario, Ontario Federation of Agriculture, Royal Agricultural Winter Fair, Ontario Potato Growers Association, Ontario Beef Pasture Committee, Canadian Horticultural Council, Canadian Potato Industry Conference and many others.

Large numbers attend meetings at the local and provincial levels, and new methods, new varieties and new friends are introduced and inspiration developed.

One of the high lights and chief project during the past year has been the second Ontario Pasture Competition. 590 farmers entered in thirty-seven counties and districts. Provincial and zone winners were:

Ontario Champions .	Cardiff Brothers, Renfrew
Runner-up	Jaffray Rutherford, Leith
Third	Herbert W. Watson, Inglewood
	Donald Hart, R. R. 6, Woodstock
Fifth	Bruce Harper, Stouffville.

Pasture Projects

Managed pasture demonstrations are continuing in Eastern and Northern Ontario. These five-acre lots of recommended seed mixtures, managed as outlined in the project, have demonstrated their ability to carry one and a half animal units per acre over the entire pasture season.

In 1960 thirty-two county Soil and Crop Improvement Associations are undertaking a new project designed to exploit the vigorous characteristics of Saratoga brome and DuPuits alfalfa. Each demonstration consists of two acres of Saratoga-DuPuits mixture and two acres of orchard-DuPuits mixture. In addition, ten counties are undertaking an eight-acre project to demonstrate the competitive characteristics of brome-grass with Vernal alfalfa.

High Yield Clubs

High yield clubs in such crops as fall wheat, barley, oats, soybeans, corn and peas have been discontinued, but enthusiams and interest remain in 500-Bushel Potato Clubs on an area basis. First organized in 1943, these clubs have served a most useful purpose in cutting costs of production per acre, efficiency, and improvement of potato quality. Their success has largely been responsible for initiating projects for other crops.

Reaching a high point in 1948, with 21 clubs and 394 competitors, there were eight clubs and 121 competitors in 1959. Carl P. Meyers, Zephyr, had top yield, with 689 bushels of Sebago variety per acre. Ross Harrison of Mount Albert had the highest yield of dry matter per acre, with his Huron variety testing 19.1 per cent and yielding 7,888 pounds of dry matter per acre. The Ontario County club had the highest club average, with twenty members averaging 508 bushels per acre. Average yield for the province was estimated at 210 bushels per acre.

Through a number of committees composed of practical farmers, together with representatives of various branches of the federal and provincial service, interests of specialized groups are given periodic and regular attention. For instance, the Registered Seed Growers Committee, the Seed Marketing and Publicity Committee, the Foundation Seed Committee and the Canadian Forage Seeds Project all deal actively with specific matters pertaining to distribution, recommended prices, and use of approved and recommended varieties of grains, grasses and clovers. The Potato Committee covers a broad range of activities for this specialized crop. Likewise the Turnip Committee keeps abreast of problems pertaining to that industry, often delegating responsibilities to subcommittees and departmental officials.

As an encouragement to juniors in field crop work The Ontario Soil and Crop Improvement Association offers the following trophies each year:

4-H Grain Club Challenge Trophy (Ontario Championship); 4-H Potato Club Challenge Trophy (Ontario Championship); Championship awards in Agronomy sections for College Royals at Ontario Agricultural College, Guelph; Western Ontario Agricultural School, Ridgetown, and Kemptville Agricultural School, Kemptville.

Number of Seed Shows, 1960	36
Total Prize Money Paid	\$12,386.40
Total Exhibitors	
Total Entries	4,264
Total Attendance	28,055
Cereal Seed Offered for Sale by Exhibitors	28,952 bus.
Forage Seed Offered for Sale by Exhibitors	7,507 lbs.
75-lb. Bags Seed Potatoes Offered for Sale	

Seed Sales and Exports

Some 1,204 seed growers from Ontario were members of the Canadian Seed Growers' Association at the beginning of 1960. This compares with 1,422 in 1959; 1,593 in 1958, and 1,670 in 1957. The number of elite and probationary growers has more than doubled in the last few years. There are now twenty-nine elite, two second-year, eight-first-year, and eleven apprentice probationers.

Export of Ontario grown seed oats and wheat is estimated at 315,000 and 294,000 bushels respectively, as compared to 265,000 and 328,000 bushels in 1958-1959. More than 300,000 bushels of oats moved through dealer channels to Ontario growers. At least 75 to 80 cars of pedigreed seed moved into Ontario from Western Canada. Local use of pedigreed seed has increased, and it is estimated that ninety per cent of pedigreed seed sales is now handled by dealers.

The Seed Marketing and Publicity Committee met periodically and recommended minimum prices for various grades of oats, fall wheat, barley, winter barley and rye. Several releases were prepared and distributed to promote the use of good seed. A summary of breeders' seed allocation by the Foundation Seed Distribution Committee is as follows:

19 bushels of oats to ten growers;

 $2\frac{1}{2}$ bushels of barley to two growers;

5 bushels of soybeans to four growers;

4 bushels of peas to two growers; 500 pounds of ryegrass to one grower.

In March the variety of oat, "Russell", was licensed. No foundation seed was distributed, but a supply of 72 bushels of registered seed was made available to Ontario. This was distributed in two-bushel lots to thirty-six elite seed growers.

The following changing conditions are worthly of note:

- (1) Pedigreed seed wheat is subject to the assessment and tolls established by the Ontario Wheat Growers' Marketing Board.
- (2) One meeting was held to determine the feasibility of organizing a plan under the Farm Products' Marketing Act for pedigreed seed.
- (3) The Ontario Birdsfoot Trefoil Growers' Association was recently organized, and from one small area marketed close to 300,000 pounds.
- (4) Ten years ago there were more registered seed growers in the Ottawa Valley than any other area of Ontario. Today pedigreed growers are concentrated in the Southwestern part of the province. There are forty-one elite growers west of Toronto and only eight east of Toronto.
- (5) Corn dealers are now sealing their own seed. This plan is working quite well. Inspectors have been relieved of a lot of work. Large numbers of varieties are checked in growing trials against original samples for trueness to type or variety.

WEED CONTROL

The crop season of 1959 was noted for high temperatures and fairly widespread drought over most of the province in the pre-harvest season. With fall rains, ragweed, goldenrod, second growth and seedling wild carrot were much in evidence during September and October. This resulted in unusual activity in mowing roadsides during this period.

Chemical weed control is increasing in acreage and in effectiveness. Four fifths of the total acreage sprayed is with a 2,4-D type chemical on cereals and corn. Butyrics are being used sparingly and are finding a place on legumes which would not otherwise be sprayed. The acreage of corn treated with Simazine has increased slightly.

The following summary estimates crop acreages, by districts, sprayed for weed control in 1959:

District Southwestern Ontario Western Ontario Niagara Central Ontario	Cereals 59,730 143,000 15,791 23,477	Corn 250,260 12,350 7,730 4,178	Pasture 17,640 9,220 2,725 869	Vegetables 3,200 5,000 1,400 4,661
Eastern Ontario	63,289	2,000	30,454	14,261
		Pr	e-emergent	
	Corn	White Bean.	s Soybeans	Others
Southwestern Ontario	6,000	1,100	3,210	60
Western Ontario	1,220		_	_
Niagara	1,247		denomina	- Annual - A
Central Ontario	510		manus.	1,100
Eastern Ontario			-	
Totals	8,977	1,100	3,210	1,160
	Total Post	t-emergent		Total Pre-emergent
Southwestern Ontario		,830		10,370
Western Ontario	169	,570		1,220
Niagara	27	,646		1,247
Central Ontario	33	,185		1,610
Eastern Ontario	65	,289		demod
Totals	626	,520		14,447
	ent Spraying	,	526,520 acres 14,447 acres	

DISTRICT ROAD MILEAGES SPRAYED AND MOWED IN ONTARIO IN 1959

	Sprayed	Mowed
Southwestern Ontario	5,476	6,726
Western Ontario	5,494	6,699
Niagara	3,746	7,605
Central Ontario	5,904	7,964
Eastern Ontario	4,129	5,392
Provincial Highways	5,000	games
•		
Totals	29,749	34,386

Forty-four weed inspectors appointed by counties worked a total of 4,840 days and issued 449 orders under The Weed Control Act. Total salary and expenses amounted to \$70,697.41, of which fifty per cent was paid by this department. In addition, fifty per cent of the salary for township weed inspectors in Northern Ontario was paid up to a maximum of fifty dollars per annum.

In 1959 there were 48 county weed inspectors; 175 municipal weed inspectors in Northern Ontario; 469 municipal weed inspectors in Southern Ontario, and 11 district weed inspectors.

A committee of Crop Improvement officials, seed processors, and municipal officers met with officials of the Department of Agriculture and presented recommendations for a revision of The Weed Control Act. In the section dealing with seed cleaning plants, standards for plant operation and equipment have been improved and special requirements recommended for plants processing pedigreed seed. These recommendations will be incorporated into the Act with Regulations to be effective for the 1960 season.

Barberry and Buckthorn, Leafy Spurge, Knapweed

Eight counties participated in the barberry and buckthorn eradication assistance policy of fifty per cent of the cost of chemicals up to a maximum grant of six hundred dollars to a county in any one year. Four counties participated in the leafy spruge policy of fifty per cent of the cost of chemicals with a maximum grant of \$250.00 in any one year. Total cost of program in twenty-three areas amounted to \$13,487.24.

Extension

The usual publications on weeds, weed control and herbicides were maintained and distributed. In 1959 over 15,000 copies of Circular 75A, "Guide to Chemical Weed Control in Field Crops", were distributed. The "Weed of the Week" series of press releases from May through September occupied over 330 feet of single column newspaper space in the Ontario press. It also furnished material for several television broadcasts over the C.B.C. stations in Ontario.

Meetings

More than thirty county weed meetings were held, most of which featured chemical weed control. These were in addition to a two-day short course on weeds and weed control which has become a regular winter project of the Northumberland Soil and Crop Improvement Association. A two-day meeting for county weed inspectors was held in Guelph on July 7 and 8, and a meeting of metropolitan weed inspectors was held in Toronto on June 5.

SEED CLEANING PLANTS

415 seed cleaning plants complied with standard requirements, and these were issued license to operate during the year. Comparative figures are: 425 in 1958; 441 in 1957; 435 in 1956, and 453 in 1955. The license fee has been changed to five dollars for the incoming year, and provision is being made for special license for plants cleaning pedigreed seed.

A very successful seed processors' school was held for the third succesive year.

POTATOES

Supplies of old stock during June and July were cleaned up easily, with prices around the \$2.50 to \$3.00 mark for a 75-pound bag. The new crop was light, demands were good, and the entire crop moved to consumption during July in record time. Comparative wholesale to retail prices on the Toronto market started at \$4.50 and ended up around \$3.00 for 75 pounds, with trends the same for 50 and 10 pounds.

Potato acreage in Ontario for 1959 was 53,000, a drop of six per cent. Total yield was down from 7,967,000 cwt. to 5,614,000 cwt. The 1948-1957 ten-year average was 64,600 acres, and the 1942-1951 acreage was 93,000 acres. Growers

have dropped out of the potato business at a terrific rate the past two years, while others have stepped up their acreage. There are more farmers now buying potatoes than growing them. A total of 9,555 carloads were imported and 156 carloads exported.

Fields entered for seed potato certification showed a reduction of 400 acres. Only 999 acres were finally passed, the lowest in more than thirty years. A high of 2,365 acres was reached in 1947.

The new grade of Ontario No. 1, effective September 1, 1958, worked out satisfactorily. Changes are now being considered to bring Canada No. 1 grade in line, particularly with regard to size. New regulations were introduced under the Farm Products Grades and Sales Act in June, 1959, to require: (1) new bags for all grades of potatoes; (2) maturity regulations to provide that new potatoes shall contain not more than ten per cent of the tubers with more than half the skins feathered or missing. Already improved quality has resulted in an increase in demands, and prices of Ontario potatoes have reflected upwards, with considerably more being packed as No. 1 grade and fewer as No. 2.

These changes were made at the request of the Ontario Potato Growers Association. This organization also requested an investigation into the quality of early potatoes in Southwestern Ontario. The early potato subcommittee consisted of Dr. A. Zitnak, Ontario Agricultural College, as chairman, with members L. F. Ounsworth, Research Station, Harrow; J. Cutliffe, Extension Department, and R. E. Goodin. Objectives were drafted and a full program adopted. Copies of the report are available. Recommendations were made for the continuation of studies, with revision and further emphasis on marketing.

The news in April that duty on potatoes had at long last been finally changed to apply throughout the entire year was most welcome to all those concerned with the welfare of the industry. To those concerned the change is the result of many years of effort.

A duty of twenty per cent now applies on potato flakes, but granules and some other processed potato products have entered duty free. These come from concentrated potato producing areas of the United States, and aggressive American concerns have been very busy, particularly during the past year, establishing accounts for granules at institutions, hotels and other eating places. The household trade has not been neglected, with at least seven granule products now in many chain stores. A step-up in advertising and an improved quality product account for sales being built up in all outlets.

After representation, the budget address included a change, effective April 1, 1960, to apply a duty of 17½ per cent on potato granules.

In a move to revolutionize the potato consuming habits of Canadians, Salada-Shirriff-Horsey during the last summer purchased property and erected a modern potato processing plant at Alliston, Ontario, to manufacture an entirely new kind of instant mashed potatoes for the Canadian market. Up to now dehydrated mashed potatoes on the market have been in the form of granules. The Salada-Shirriff-Horsey process, developed in the United States and licensed exclusively to the Company in Canada, produces a new type of instant mashed potatoes in flake form, which has met with wide consumer acceptance. The first Canadian plant incorporates approximately 65,000 square feet and will employ initially about 120 people.

The new process will simplify greatly the preparation of potatoes by institutions and housewives. The flake process retains the natural characteristics of potatoes to a greater degree than the granule method, thus ensuring a uniform fluffy product. Test marketing found that considerable savings were realized in

potato costs.

The Company decided to locate its first plant at Alliston after comprehensive surveys were made of possible locations in all parts of the country. Potatoes with a high solids content are necessary to produce this product. Such potatoes are produced in the Alliston area.

On November 24 the Ontario Potato Growers Association presented a twenty-five page brief to the Agricultural Marketing Enquiry Committee. Details were provided on a wide variety of subjects pertaining to the potato industry in Ontario, and twenty-two recommendations were made.

For the seventeenth consecutive year supplies of seed were secured for branch farms of the Departments of Health and Reform Institutions. This year's supplies were valued at about fifteen thousand dollars.

Turnips

Promotion work for the improvement of production and consumption was continued. Several projects were given attention, such as use of sized seed of a standard variety, precision seeding, spraying and dusting for insect and disease control, and mechanical harvesting. A machine to hoe and thin mechanically is the latest introduction.

Progress has been made by improvement to grade and quality and investigation of processing. When and where possible, short-method cooking, use of raw turnips in salads, and encouragement of increased consumption were promoted.

Information Branch

The program of the Information Branch is designed to provide information of value to the producers and consumers of Ontario farm products, and to Department extension personnel.

The Information Branch secures information from personnel in all branches and institutions of the Department, and from other sources. The Branch uses all media in carrying out its information program.

News Releases

Two weekly news release services provide useful farm and consumer information to the editors of Ontario weekly newspapers, daily newspapers, radio stations, television stations, farm magazines, and other publications. During the year 236 Farm News stories and 208 Consumer News stories were provided through these services to each of 830 editors, writers, and agricultural specialists.

Radio Service

Two monthly radio services, featuring farm and consumer information, provided 152 separate farm programs to 31 Ontario radio stations and 144 consumer programs to 36 Ontario radio stations.

Television

The Branch provided selected television stations with material for their farm programs.

Publications

A total of 1,021,600 copies of 142 separate publications, and 17,300 copies of 6 separate reports, was printed during the year.

Junior Farmer Loan Branch

The purpose of this Branch is to provide the management and staff for the Ontario Junior Farmer Establishment Loan Corporation. This is a Crown Company established by authority of The Junior Farmer Establishment Act 1952.

With the announcement of the new long term credit available to all farmers by the Farm Credit Corporation, the Province of Ontario decided to retire from the Junior Farmer Loan scheme. Applications for loans received after December 1st, 1959, were returned to the senders accompanied by a letter of explanation. At the close of the fiscal year ending March 31, 1960, there were approximately 300 partially completed loans.

With the curtailment of the routine work, the staff has been reduced by 25% through transfers and retirements. The legal staff, which has been reduced by half, is making every effort to complete the new loans as soon as possible. From then on, two lawyers will be able to do the necessary legal work in connection with sale proceedings, discharges, easements, etc. The other work in connection with the loans to Junior Farmers includes accounting, supervision, collections, fire insurance records, sales and transfers.

1959 was a very busy year with 932 applications for loans being received between April 1st and December 1st. During the fiscal year a record of 647 loans were granted. Principal repayments of \$1,416,433.89 were made during this time. Included in this amount were 128 loans paid off in full. In the same period there was one farm taken over by sale proceedings. Total losses through repossessions in the eight years during which loans have been made, amount to \$6,893 or approximately 1/40 of 1% of the amount advanced.

Mortgage arrears are slightly lower on a percentage basis than a year ago. In collecting arrears, legal action is resorted to only when persuasive measures have failed. Fortunately most Junior Farmers have a very commendable respect for their obligations and are prompt and businesslike in their dealings with the Corporation.

The total number of loans granted was 3,846 and the amount approved was \$28,557,459.

Markets Branch

The Markets Branch administers the regulations approved under (1) The Farm Products Marketing Act, (2) The Farm Products Grades and Sales Act, (3) The Plant Diseases Act, (4) The Co-operative Loans Act, (5) The Grain Elevator Storage Act and (6) The Farm Products Containers Act. The Commissioner of Marketing is also Chairman of the Ontario Food Terminal Board administering The Ontario Food Terminal Act.

THE FARM PRODUCTS MARKETING ACT

The highlights of the year were the amendments made to the Farm Products Marketing Act during the 1960 Session of the Ontario Legislature, the reconstitution of the Farm Products Marketing Board, the decision that promotion plans should not be initiated under section 9 of the Act, and the plebiscites conducted on proposals to establish new plans on the three following products, Apples, Turkeys and an all-inclusive Fresh-Fruit Plan to include Peaches, Pears Plums, Grapes and Sweet Cherries.

The general principles underlying the 1960 Amendments to The Farm Products Marketing Act are the protection of the producer and to ensure that the financial transactions in respect to farmer's products are handled in the best interests of the producer.

Since the inception of marketing legislation in Ontario the primary purpose has been to give the farmer an opportunity to market his product to the best advantage in an orderly manner.

In most cases producers' boards have succeeded in carrying out this principle but experience indicates that some supervisory power must be exercised to assure the producer that his marketing board is adhering strictly to the principles laid down in the legislation.

It is the feeling of the Farm Products Marketing Board that the operation of any marketing board or agency must be on a sound business basis just as is the case in commerce and industry. There is also a responsibility to ensure that service charges to the farmer are not excessive and that unrealistic reserves are not built up at the expense of the producer.

The amending legislation will give the Ontario Farm Products Marketing Board more complete information as to the operation of the various marketing plans. It will also provide for more uniformity in the operation of all marketing plans in the Province.

Amendments to the Act are mainly to assure that if an agency type marketing plan is voted out by the producers, regulations may be made to take over the assets of the marketing agency and carry out any phases of marketing deemed advisable.

Second purpose of the amendments is to give the Ontario Farm Products Marketing Board additional supervisory powers over the operations of marketing plans.

Third purpose is to make it possible for local boards to take over marketing functions which up until now have been exclusively reserved for marketing agencies.

For various reasons a marketing agency may cease to carry on business, for example, if a plan is voted out by producers or it becomes desirable that a local

board use its own powers of marketing, or a new plan is established for purposes not requiring a marketing agency. When this happens it is important that the Lieutenant-Governor in Council have the necessary authority to place the assets and marketing powers of the agency in either the Farm Products Marketing Board, the local board or a trustee and to arrange for the carrying on of the marketing for such time as may be considered necessary to work out another plan of marketing or to arrange for the marketing to pass through normal transitional stages.

Section 2 of the Amendments makes it possible for (1) delegation to a local board of power to require processors, dealers, etc., to deduct licence fees and pay them over to a local board or marketing agency; (2) for the Ontario Farm Products Marketing Board to supervise the making of grants by a local board or marketing agency and require that grants not be made without the approval of the Board; and (3) makes it possible for the Board to revoke the appointment of a marketing agency without first getting a recommendation from the local board.

Section 3 of the Amendments deals exclusively with the operation of marketing agencies. At present service charges payable by producers for marketing their products are set by the local board and levied by the marketing agency. The amendments provide that the Farm Products Marketing Board must give its approval before a local board fixes the levy and may from time to time require the local board to furnish the necessary information on the full operations of the marketing agency and the local board.

The Board will, in future, receive particulars of any proposed change in the system of marketing and be given supervisory powers over any change.

The membership of the Farm Products Marketing Board formerly comprised personnel from the public service. In September 1959 the Minister of Agriculture announced a change in establishing an industry type board which provides direct producer representation. The present board is constituted as follows:

Chairman — George McCague
Members — Hugh Bailey
C. R. Magone, Q.C.
W. C. Nickerson
Bruce Teasdale
Secretary — R. A. Copeland

Section 9 of the Farm Products Marketing Act deals with the establishment of producer marketing plans whose basic function would be the raising of funds through licence fees for the purpose of advertising and promotion. These functions in themselves are outside of the definition of marketing. Therefore any plan established under the Farm Products Marketing Act must embrace marketing features, such as negotiation, to which may be added the services of promotion and advertising.

The purposes of any new plan must be broad enough to include "marketing" as defined in the Act.

Late in 1959 the Turkey Producers petitioned to have turkeys brought under The Farm Products Marketing Act. A plebiscite was held early in 1960 on the question of favour of the plan. The vote was lost, being short of the required 66-2/3% in favour. The actual result was 53.2% in support of the plan.

A plebiscite was held on an Apple Growers' Marketing Plan in 1959. While the growers supported the plan with 71% voting in favour, they requested the Board not to approve the plan because of the total number of growers on the voters' list only 16.1% voted. It was determined that this percentage, however, represented approximately 50% of the total production. The Board believes the apple growers

took a very strong and constructive view in determining that an expression of opinion from a substantial proportion of producers is important in the development of a successful program.

The plebiscite on a Fresh Fruit Growers' Marketing Plan was held March 28th, 1960. This vote was lost with 47.3% voting in favour. The result of this vote did not affect the Fresh Peach Growers' Marketing Plan which will continue to operate.

The functions of The Farm Products Marketing Board are receiving and analysing of requests from groups of producers seeking marketing plans; the development of plans and regulations with producers; the holding of plebiscites and recommendations following plebiscites.

The Board has wide authority of investigation relating to the cost of producing and marketing any regulated farm product; prices, trade practices, management policies and other related matters.

A marketing plan is comprised of two parts. Part 1 is the plan. The plan is approved by the Lieutenant Governor in Council on the recommendation of the Minister of Agriculture. The plan is the frame work. It constitutes the producer marketing board as the local board to administer the plan. It provides for the method by which the local board is to be elected. It defines the farm product or products to be regulated under the plan and the portions, if any, of the farm product to be exempt from the regulations of the plan. Part 2 comprises the regulations. The regulations are made by The Farm Products Marketing Board. They are the operational parts or the mechanics of the marketing plan. They define the extent of the regulations or control over the marketing of the regulated product. They provide for the collection of licence fees or service charges payable by the producer, on the sale of the regulated product or products to pay for the administrative or marketing expenses of the local board. Finally the regulations set out the marketing powers delegated to the local board or to an agency of the local board to carry out the purposes of the plan.

There are now thirteen plans in force under The Farm Products Marketing Act covering twenty-six crops as follows:

The Ontario Asparagus Growers' Marketing Plan, 1938
The Ontario Tender Fruit Growers' Marketing Plan, 1959
The Ontario Sugar Beet Growers' Marketing Plan, 1942
The Ontario Seed-Corn Growers' Marketing Plan, 1942
The Ontario Berry Growers' Marketing Plan, 1944
The Ontario Bean Growers' Marketing Plan, 1944
The Ontario Vegetable Growers' Marketing Plan, 1946
The Ontario Grape Growers' Marketing Plan, 1946
The Ontario Grape Growers' Marketing Plan, 1947
The Ontario Soya Bean Growers' Marketing Plan, 1949
The Ontario Fresh-Peach Growers' Marketing Plan, 1954
The Ontario Wheat Producers' Marketing Plan, 1955
The Ontario Wheat Producers' Marketing Plan, 1958.

Each plan operated in 1959 as follows:

The Asparagus Plan

Some 800 growers sell asparagus annually to the canners in Ontario for processing. Only the processing industry is regulated, i.e., asparagus sold on the fresh vegetable market is exempt from the plan. After minimum prices and conditions of sale have been negotiated by the industry a marketing agency appointed by the growers' local board sells all the asparagus purchased for processing, each growing district being allotted its share of the tonnage sold. An unique feature of this plan

is an agreement by the growers to cease cutting when total orders have been filled.

In this way production is fitted to demand.

In 1959, 2,209 tons of asparagus were sold for processing at a total value of \$727,156.00. This compares with 1,789 tons valued at \$646,185.00 for processing in 1958.

Asparagus minimum prices in 1959 were the same as in 1958:

	1959		<i>1958</i>
Select Grade	 25 ¢ per lb.	Grade No. 1	29¢ per lb.
No. 1 Grade	 18 ¢ ""	Utility Grade A	22¢ ""
No. 2 Grade	 13¼¢ " "	Utility Grade B	16¢ ""
No. 3 Grade	 7 ¢ " "	Grade No. 2	7¢ ""

The Tender Fruit Plan

Some 2,700 growers sold 4,259 tons of sour cherries valued at \$754,471.00; 1,300 tons of sweet cherries valued at \$297,418.00; 1,782 tons of plums and prunes valued at \$117,707.00; 4,977 tons of Bartlett pears valued at \$513,638.00; 10,068 tons of Kieffer pears valued at \$569,194.00; and 22,913 tons of peaches valued at \$2,110,006.00; or a total of 45,299 tons valued at \$4,361.990.00 sold for processing in 1959.

This compares with 7,360 tons of sour cherries valued at \$1,234,531.00; 871 tons of sweet cherries valued at \$227,225.00; 2,806 tons of plums and prunes valued at \$169,715.00; 4,920 tons of Bartlett pears valued at \$492,350.00; 7,495 tons of Kieffer pears valued at \$384,681.00; and 27,478 tons of peaches valued at \$2,114,915.00; or a total of 43,570 tons valued at \$4,623,417.00 sold for processing in 1958.

Cherry, plum, pear and peach minimum prices in 1959 compared with 1958

WCIC,	195	9		195	8	
Sour Cherries	\$175.00	per	ton	\$165.00	per	ton
Sweet Cherries		_			-	
White and similar varieties	220.50	99	22	220.00	99	99
Black and similar varieties	240.50	99	2.3	240.00	23	22
Plums						
Damson variety	70.50	"	22	65.00	,,,	,,,
Jam types	55.50	22	22	53.00	"	"
Prunes	70.50	99	22	65.00	22	99
Bartlett Pears 2" and up	105.50	22	22	100.00	99	"
Bartlett Pears 13" to 2"	65.50	22	99	60.00	22	"
Kieffer Pears 2-1/16" and up	57.50	99	"	50.00	33	99
prior to October 31st	62.50	"	22	55.00	99	99
Kieffer Pears 13" to 2-1/16" after October 31st	35.00	33	>>			
Kieffer Pears less than 13" after October 31st	35.00	,,	,,			
Pears, other than Bartlett or Kieffer varieties	65.50	22	"	60.00	22	22
Peaches						
Jubilee	92.50	22	99	83.00	22	22
Elbertas	92.50	,,,	,,	83.00	33	"
"V" type and other varieties	82.50	,,	,,	83.00	29	29
	- 4100			50,00		

The Sugar Beet Plan

In 1959 some 2,580 growers delivered 505,270 tons of sugar beets produced from 33,306 acres. This compares with 462,564 tons of sugar beets produced from 31,584 acres by 2,514 growers in 1958. Average yield per acre in 1959 was 15.17 tons compared to 14.65 tons in 1958. Total value of sugar beets to the growers was down at \$4,700,000.00 in 1959 allowing for suplementary payments still to be made compared to \$5,295,000.00 in 1958. Average sugar content in 1959 at 13.8% was

about the lowest in the industry's history due to unfavourable weather conditions and compared to 15.9% in 1958. Average estimated price delivered plant to the grower was \$9.33 per ton (at June 1st) in 1959 compared to \$11.23 per ton in 1958.

Sugar beets came under the shelter of the Canada Agricultural Prices Stabilization Act in 1957 when a support price reflecting 93% of the ten-year average price for beet sugar of \$13.00 per ton for 17% sugar content beets delivered plant was established. In 1958 the basis of support was changed slightly to the equivalent of \$7.98 per hundred-weight for beet sugar f.o.b. plant. The prices for sugar have weakened considerably over the past two years due to heavy world sugar production. With an average price of 1958 beet sugar f.o.b. plant realized at \$7.52 per hundred-weight a deficiency payment to the growers of \$1.15 per ton on the 1958 sugar beet production was necessitated. The deficiency payment on the 1959 crop cannot be determined until the average price of 1959 beet sugar f.o.b. plant is ascertained.

The Seed Corn Plan

The membership of this marketing group is comprised of some 200 hybrid and open-pollinated corn growers in south-western Ontario who specialize in the production of corn for seed.

Through negotiation between the grower and the dealer a base price is established for dried commercial corn to which a premium is added to arrive at a minimum price to the grower for corn for seed. The base price is the Chicago May corn future daily closing price (subject to the current rate of exchange) a bushel average for the three months, December, January and February in each year. The base price for the 1959 crop was \$1.22½ per bu., 15.5% moisture, and for the 1958 crop was \$1.22 per bu., 15.5% moisture.

In 1959, 304,159 bushels approximately of hybrid corn for seed and 23,514 bushels approximately of open-pollinated corn for seed were produced compared with 317,349 bushels of hybrid corn for seed and 36,255 bushels of open-pollinated corn for seed produced in 1958.

The minimum prices for hybrid corn for seed and for open-pollinated corn for seed in 1959 compared with those in 1958 were:

Hybrid Corn for Seed

SCHEDULE A, B, C, D

- (a) Dealer supplies the seed and detassels the corn. Grower delivers the corn on the cob to the dealer.
- (b) Grower supplies the seed, detassels and delivers the corn on the cob to the dealer.
- (c) Grower supplies the seed, detassels, dries, shells and delivers the dried shelled corn to the dealer.

1959

The base price and a min. premium of 40¢ on the base price also allowance for certain costs when assumed by the grower, namely:

\$1.62½ per bu.

\$1.62½ per bu. and .52½¢ per bu. = \$2.15 per bu.

\$1.62½ per bu. and .87½¢ per bu. = \$2.50 per bu.

1958

The base price and a min. premium of 40¢ on the base price also allowance for certain costs when assumed by the grower namely:

\$1.62 per bu.

\$1.62 per bu. and .52½¢ per bu. = \$2.14½ per bu.

\$1.62 a bu. and .87½¢ per bu. = \$2.49 per bu.

of also s for

Open-Pollianted Corn for Seed

	1959	1958
Schedule E	The base price and a minimum premium of 40¢ on the base price also additional allowances for certain varieties.	The base price and minimum premium 40¢ on the base price additional allowances certain varieties.
Yellow Dents (other than Early Golden Glow)	\$1.62 per bu.	\$1.62 per bu.
Other Dents (including Early Golden Glow)	\$1.62 per bu. and .10¢ per bu. = \$1.72 per bu.	\$1.62 per bu. and .10¢ per bu. = \$1.72 per bu.
Flints	\$1.62 per bu. and $.50\phi$ per bu. = \$2.12 per bu.	\$1.62 per bu. and $.50\phi$ per bu. = \$2.12 per bu.

The Berry Plan

Some 400 growers sold 2,143,532 qts. of strawberries valued at \$473,720.00, 598,790 qts. of red raspberries valued at \$174,412.00 and 171,044 qts. of purple raspberries valued at \$47,145.00 or a total of 2,913,366 qts. valued at \$695,277.00 for processing in 1959. This compares with 3,055,015 qts. of strawberries valued at \$639,099.00; 332,799 qts. of red raspberries valued at \$115,910.00 and 298,841 qts. of purple raspberries valued at \$85,136.00 or a total of 3,686,655 qts. valued at \$840,145.00 sold for processing in 1958.

Strawberry and raspberry minimum prices in 1959 compared with 1958 were:

Strawberies	1959 .16½¢ per qt. box	.16½¢ per qt. box
Raspberries Red Purple	Open Market .25¢ per qt. box	Open Market .28¢ per qt. box

The Bean Plan

White Bean production in 1959 from an acreage of 66,700 produced 1,147,000 bushels for an average yield per acre of 17.2 bushels almost indentical to the 1958 crop of 1,199.000 bushels from 65,500 acres for an average yield of 18.3 bushels per acre, quality of the 1959 crop was, however, much above average, in fact one of the highest quality crops on record.

The minimum price to the growers arrived at by negotiation was as follows: for all beans delivered on or before the 31st of December, 1959, the minimum price shall be \$6.00 per 100 lbs., and for all beans delivered from and including the 1st day of January, 1960, to and including the 14th day of August, 1960, the minimum price shall be \$6.15 per 100 lbs.

The above prices are a 15ϕ per 100 reduction from the previous year's price. In addition the handling charge to licence dealers was for the first time made a part of the agreement on the following basis:

The Board agrees to buy beans from the dealer at the negotiated minimum price plus 95ϕ per 100 lbs. for No. 1 grade and 70ϕ per 100 lbs. for No. 2 grade.

A graduated scale of charges by dealers for grading and picking beans for the growers in excess of 2% damage and in excess of 18% moisture was negotiated and established. The levy deducted from the growers to support the minimum price in each year was 77ϕ per hundredweight in addition to the regular 8ϕ per hundred-

weight licence fee for administration purposes. Out of the support levy 70ϕ per hundredweight on the 1958 crop was returned to the growers and about the same amount, it is estimated, will be returned on the 1959 crop. Marketing was not completed at the time of writing this report. The 7ϕ per hundredweight levy on the 1958 crop and the estimated same levy on the 1959 was used to market outside of Canada some 40,000 bushels of the 1958 crop and an estimated 50,000 bushels of the 1959 crop already exported, and a possible additional 50,000 bushels yet to export.

The Vegetable Plan

Some 9,500 growers sold 276,479 tons of tomatoes valued at \$9,829,401.00; 17,292 tons of green peas valued at \$1,759,395.00; 70,095 tons of sweet corn valued at \$1,828,391.00; 2,837 tons of green and wax beans valued at \$322,865.00; 3,432 tons of beets valued at \$114,309.00; 1,886 tons of cabbage valued at \$34,974.00; 10,777 tons of carrots valued at \$340,650.00; 12,044 tons of pumpkin and squash valued at \$124,343.00; 861 tons of lima beans valued at \$92,210.00 and 454 tons of long green cucumbers valued at \$17,480.00 for processing in 1959, or a total tonnage of 396,157 of vegetables valued at \$14,464,018.00.

This compares with 315,663 tons of tomatoes valued at \$11,238,211.00; 21,597 tons of green peas valued at \$2,162,645.00; 78,551 tons of sweet corn valued at \$2,045,692.00; 2,597 tons of green or wax beans valued at \$297,207.00; 4,259 tons of beets valued at \$121,420.00; 5,193 tons of cabbage valued at \$82,055.00; 11,024 tons of carrots valued at \$308,902.00; 11,055 tons of pumpkin and squash valued at \$131,012.00; 1,085 tons of lima beans valued at \$131,052.00; and 856 tons of long green cucumbers valued at \$38,557.00 for processing in 1958 or a total tonnage of 452,736 of vegetables valued at \$16,533,680.00.

Minimum prices for 1959 compared with 1958 were as follows:

Minimum prices for 1939 compared with 1936	were as	8 101	iows:			
	195	9		195	8	
Tomatoes — No. 1	\$41.50	per	ton	\$41.50	per	ton
No. 2	25.50	" >>	"	25.50	23	2.3
Green Peas — graded average of tenderometer						
readings						
0 – 80	175.00	99	22	150.00	99	2.2
81 – 85	150.00	,,	22	200.00		
126 – and up	84.00	22	22	84.00	22	2.9
Sweet Corn	26.00	22	22	26.00	2.2	22
	109.00	23	22	109.00	22	2.2
Green or Wax Beans	103.00			103.00		
Beets						
(a) for beets graded by the processor	71.00	33	"	71.00	2.9	23
\$" to 1½" diameter	42.00	,,	,,	42.00	3.3	9.9
14" to 14"		22	22	30.00	9.9	9.9
1\frac{9}{4}" to 2\frac{1}{2}" "	30.00	,,	22		9.9	22
$2\frac{1}{2}''$ to $4\frac{1}{2}''$ "	15.00			15.00	22	22
(b) for ungraded beets 1½" diameter and up	40 70	,,	,,	24.00	,,	,,
Cabbage	13.50	- //	,,	14.00		.,
Carrots						
(a) ungraded minimum diameter						
1½" June 25th to August 15th	52.00	2.2	22	52.00	2.2	22
(b) ungraded minimum diameter						
1½" August 16th to August 31st	35.00	99	22	35.00	2.7	2.2
(c) ungraded minimum diameter						
1½" September 1st to September 15th	28.00	22	"	28.00	9.9	9.9
(d) ungraded minimum diameter						
1½" November 11th to March 31st	27.00	9.9	"	27.00	2.2	2.9
Lima Beans	107.00	2.2	11	107.00	2.2	2.9
Pumpkin and Squash	10.00	2.2	22	10.00	2.3	2.7
Long Green Cucumbers						
No. 1	45.00	2.9	99	45.00	9.9	2.2
No. 2	10.00	2.2	22	10.00	2.2	2.2
200						

The Hog Plan

The Ontario Hog Producers' Co-operative, the marketing agency of the Ontario Hog Producers' Marketing Board, extended its directional program into Eastern Ontario on December 14th, 1959. The marketing agency is now establishing minimum daily prices on 96.97% of all hogs for slaughter in Ontario. There has been considerable expansion in the number of assembly points. There are now 42 yards, under the control of the agency, receiving hogs in the Province.

There have been changes during the year in the Federal price support program. Until October 1st, 1959, hogs were supported at \$25.00 per cwt. At that time the floor price was dropped to \$23.65 per cwt. which was 80% of the past ten year average. On January 11th, 1960, the Canada Agricultural Stabilization Board established price supports on the basis of deficiency payment and discontinued the principle of a guaranteed offer to buy. It is anticipated that deficiency payments will be calculated on a 12-month national average, and should that figure be lower than 80% of the average for the past ten years, the producer will be paid the difference.

The embargo on American pork imported into Canada was lifted February 8th, 1960. To this date the opening of the Canadian border has not resulted in the importation of American pork in any significant quantity.

Presentations, made before the Agricultural Marketing Enquiry Committee by representatives of producers and processors, repeated the opposing views with regard to the present system of selling live hogs. Further study is being made in an effort to develop a sales method which will remove any features of preference or selection in selling procedures.

The Grape Plan

Some 825 growers marketed 30,022 tons of grapes valued at \$2,749,767.00 for processing in 1959. This compares with 33,700 tons of grapes valued at \$2,901,138.00 sold for processing in 1958.

Grape minimum prices in 1959 compared with 1958 were:

The Soya-Bean Plan

After several years of increasing acreage the industry is now tending to stabilize at about present proportions. Acreage planted in 1959 was 248,000 compared to 256,000 acres in 1958. Production increased in 1959 to 6,783,000 bushels for an average yield per acre of 27.4 bushels compared to 6,579,000 bushels in 1958, for an average yield per acre of 25.7 bushels.

The principle of this plan is similar to the other negotiation type cash crop plans, except that the market for soya-beans is limited to a few processors, and that Canada is still less than 50% self-sufficient in its production of soya-beans for its combined soya-oil and meal requirements. Soya-beans, soya-meal and soya-bean oil for industrial purposes and canning sardines are imported free of duty; soya-bean oil for edible purposes is imported at a 20% tariff rate. The cost of soya-beans to Ontario processors must at all times be competitive with the delivered cost of foreign soya-beans, soya-bean oil and a host of other competing edible oils. A dealer's maximum charge of 10ϕ per bushel to the grower for cleaning handling and selling soya-beans, which due to competition between the dealers is seldom charged in full, and a discount of $2\frac{1}{2}\phi$ per bushel for each $\frac{1}{2}\%$ moisture content over $\frac{14}{6}$ to cover shrink and drying expenses with cash to be paid by the dealer to the grower for all soya-beans on delivery were the main terms of contract negotiated and established under the plan.

Representations were again made by the Ontario Soya-Bean Growers' Marketing Board to the Government of Canada for a support price on soya-beans in an effort to increase or at least maintain present production of soya-beans. The Government of Canada approved a support price but set it at \$2.00 per bushel to the grower, on a deficiency payment basis, this was a 10¢ per bushel reduction from the support price on the 1958 crop, which resulted in a deficiency payment to the growers of $19\frac{1}{2}$ ¢ per bushel for a total of $1\frac{1}{4}$ million dollars.

The Fresh Peach Plan

Following the limited scale of operations by the fresh peach growers in 1958 numerous meetings were held within the industry looking forward to a more active marketing program by the Fresh-peach Growers' Marketing Board in 1959. Object of the negotiations between the growers and the shippers centred around establishing an efficient system to meet the three chief needs in a fresh fruit marketing program: (1) a uniform price to the trade: (2) uniform quality; and (3) continuity of supply.

While the principles involved were agreed to by all concerned the negotiations broke down largely over the question of the ownership and management of the shipping facilities and the charges for the services. As a result little actual change was brought about in 1959 over the 1958 fresh peach marketing program. Efforts to put into effect a firm f.o.b. price failed. A fixed shipper mark-up was discontinued and the charge to be made for this service was left to each individual shipper to decide. A grower price was established and maintained throughout the season and to give it effect shippers, truckers and producers were licensed. A light crop with less than 1 million bushels to be sold on the fresh fruit markets compared to over 1½ million bushels in 1958 enabled the Fresh peach Marketing Board and its sales agency to weather the year with reasonable success but with what it regarded as a make-shift plan. While the objects of a uniform price to a trade, uniform quality and continuity of supply were not achieved, nevertheless further definite progress was made in the fields of peach pre-cooling and temperature control, better packaging, wider distribution and greater consumer satisfaction.

The Flue-Cured Tobacco Plan

Perhaps the most successful market in the history of the Ontario flue-cured tobacco growing industry wound up during March 1960. The 1959 crop totalled 145,220,664 pounds, sold for an average of 56.25 cents per pound and for a dollar return of \$81,525,841.00 to the growers. The price paid was 8.68 cents per pound higher than for the 1958 crop which totalled 173,213,818 pounds, sold for an average of 47.57 cents per pound and for a dollar return of \$82,394,702.00 to the growers.

Production and revenue from what several authorities described as the highest quality flue-cured tobacco crop ever grown in Ontario could have been considerably more. A devastating frost during September wiped out more than 20 million pounds—in many cases the grower's profit for the year and several additional pounds were destroyed by hail, storms and fires.

A further favourable factor contributing to the success of the market was the virtual absence of tobacco that had been treated with chemical sucker retardent material which comprised only one percent of the entire 1959 crop compared to between 70 and 80 percent of the 1958 crop. Tobacco buyers had made it clear prior to the 1959 planting season that they did not desire treated tobacco and they further emphasized their stand by paying an average of 10.55 cents per pound less than they paid for untreated tobacco. Tobacco crops that had been treated amounted to 1,524,007 pounds for a dollar value of \$696,471.00 to the growers.

The Winter Wheat Plan

The Ontario Wheat Producers' Marketing Plan approved during June, 1958, has now experienced two crop years of successful operation. While the marketing plan is of the negotiating type it also includes provision for an equalization fee of 9ϕ per bushel paid by the producer to establish a price support fund to assist in the disposal of wheat, surplus to domestic requirements. It is a part of the plan that the unused portion of this fee be returned to the producers at the end of each crop year.

The 1959 crop due to severe winter kill, particularly in the heavy producing south-western Ontario counties, was in the main responsible for a reduction from a production of 23,896,000 bushels from 580,000 acres, for an average yield of 41.2 bushels per acre in 1958, to 12,464,000 bushels from 425,000 acres for an average yield of 29.3 bushels in 1959.

Negotiation for the 1959 crop indicated that both producers and buyers were aware of the short crop, and although minimum prices were established at only 5¢ per bushel over the previous year it was anticipated the Ontario Wheat Producers' Marketing Board would not be required to take delivery of wheat. The direct opposite to 1958 when the local board was called on to purchase 3.4 million bushels of wheat for export occurred in 1959. The services of the Grain Marketing Division of United Co-operatives of Ontario were available but in view of the short crop were not required. The deduction of 9¢ per bushel equalization fee along with the 1¢ per bushel licence fee (a total of 10¢ per bushel) was continued in 1959. As a result it is expected that all the 1959 equalization fee will be available for return to the producers.

The minimum prices already referred to were on the following basis:

1		
July 1959 \$1.40	January 1960	\$1.48
August 1959 1.40	February 1960	1.50
September 1959 1.40	March 1960	1.50
October 1959 1.42	April 1960	1.47
November 1959 1.44	May 1960	
December 1959 1.46	June 1960	1.41
Less grade and moisture discounts as se	t out herein (less authorized	licence
fee and levy).		

The local board agreed to purchase wheat at the above prices from licensed dealers allowing a handling charge of 10¢ per bushel, and as already stated no offerings were made. Moisture discounts of $2\frac{1}{2}$ ¢ per bushel for each $\frac{1}{2}$ % of moisture over 14% were provided for together with a grade discount of 3¢ per bushel for grade No. 3 C.E. A maximum handling charge of 10¢ per bushel is allowed the dealer. However, in some cases competition between dealers results in a lower charge being made on the producer.

The Canada Agricultural Stabilization Board again declined to agree to the support price asked by the Ontario Wheat Producers' Marketing Board. The mandatory minimum price possible under the Federal legislation of 80 percent of the 10-year average price which amounted to \$1.39 per bushel was authorized.

THE FARM PRODUCTS GRADES AND SALES ACT

The following work was carried out during the 1959-60 fiscal year by the Farm Products Inspection Service:

- (1) enforcement of the regulations, under The Farm Products Grades and Sales Act, respecting (a) Fresh Fruit and Vegetables; (b) Fruit and Vegetables for processing; (c) Honey; (d) Compulsory inspection areas and highway inspection stations; and (e) Dealers in Fruit and Vegetables.
- (2) related work included acreage surveys, the testing of new produce containers, shipping maturity testing for fruit and vegetables, grape maturity

experimental work, electronic determination of colour in processing tomatoes, checking of tenderometers, fruit and vegetable exhibits, compiling and issuing fruit and vegetable shipment reports and liaison and committee work with fruit and vegetable industry organizations.

These services were administered through five district offices located in Leamington, Vineland, the Ontario Food Terminal, Toronto, Bradford and Gravenhurst. In addition sub-offices were operated in Simcoe, Grand Bend, Galt, Hamilton, Orangeville, Alliston, Barrie, New Liskeard, Sudbury, Port Arthur, Brighton and Ottawa.

Fresh Fruit & Vegetable Inspection

Compulsory inspection areas were again designated in Essex County, the Niagara Peninsula and the Bradford Marsh, all controlled by Highway Inspection Stations. The Highway Station at Gravenhurst required trucks carrying produce from southern Ontario to the North, along No. 11 Highway, to stop for inspection. Administrative and request inspections were carried out within the closed areas, at farm and shipper packing sheds, dealers' platforms and at central plants

Outside the compulsory areas, inspection of fruit and vegetables was carried out in the main production areas, at receiving and distribution points and at wholesale and retail levels throughout the Province.

Retail inspection in the larger centres of Ottawa, Metropolitan Toronto, Hamilton, London and Windsor was applied entirely by the Consolidated Retail Inspection Service, Dominion Department of Agriculture. Consumer complaints, farmers' markets, roadside stands and community sales barns were covered mainly by Provincial Inspectors.

Federal-Provincial Relations

The past fiscal year saw very definite progress toward increased uniformity in the application of fruit and vegetable grading regulations carried out by Federal and Provincial Inspection Services. The Canadian Horticultural Council meetings stressed the necessity toward a closer relationship between the provinces and the Federal Service. An active committee has been formed with the provinces represented, and headway has already been made toward the goal of uniformity in thinking and action in the field of fruit and vegetable inspection.

SUMMARY OF OPERATIONS - FRESH FRUIT & VEGETABLE INSPECTION

Administrative Visits		
	1959-60	1958-59
Producers	12,484	12,849
Wholesalers	24,048	25,347
Packers & Shippers	31,625	37,125
Retailers	12,960	9,887
Markets	2,782	3,882
Roadside Stands & Sales Barns	1,027	2,092
Truck & Requested Inspections		
Certificates Issued	8,200	11,729
Blanket Inspection Reports Issued	8,435	6,940
Trucks Checked Through Highway Stations	29,989	39,095
Inspection Fees Collected	\$41,553.00	\$37,786.00
Violations		
Detentions Issued	4,805	5,014
Violations Issued	82	82
Letters of Warning Sent	65	51
Convictions	47	61
Total Fines	\$ 1,278.50	\$ 1,724.00
Average Fine	\$ 25.00	\$ 20.00

Inspection of Processing Crops

Tomato Grading—In 1959 sixty nine grading platforms were operating, requiring a total of 144 graders who handled 73,934 loads of tomatoes. The quality of the tomatoes throughout the province was above normal for colour but the prolonged period of hot weather resulted in rapid breakdown of fruit and considerable sun scald. Yields were reduced by an early frost in Eastern Ontario.

SUMMARY OF OPERATIONS

	Western	Central	Eastern
Grading Commenced	August 4	August 10	August 12
Grading Finished	October 20	October 14	October 2
Days of Operation	73	60	44
Graders Employed (at peak)	81	30	33
Grading Platforms	27	19	23
Total Loads Graded	47,540	12,857	13,537
Loads Graded & Received	46,340	12,687	13,288
Loads Graded & Rejected	1,200	170	249
Average Grades % No. 1	63) Bul	k of 62) Bulk of	of 56) Whole
) crop	to) crop t	o) crop
% No. 2	35) Oct	. 5 35) Oct. 3	42) to
) only	only) Oct. 2
% Culls	2)	3)	2)

Carrot Grading—In 1959 processing carrots were graded at the following receival points: Campbell Soup, New Toronto: Clarkson Cold Storage; Lang's Cold Storage, Hamilton; Vineland Growers' Co-operative, Jordan. 650 loads were received and 4 loads rejected. The average grades were, No. 1—94%, under size 2%, culls 4%. The quality was generally very good with some frost injury toward the end of the season. Due to the hot, dry weather during the main growing season carrots were below normal size and many under size roots were left in the fields tending to reduce yields.

Pea Grading—Again Farm Products Inspectors undertook the checking of tenderometers used by processors. Tenderness readings with these instruments was the basis of payment to growers.

Asparagus—The Inspection Service undertook a survey of the Asparagus Marketing Board receiving stations to determine if asparagus delivered generally met the grade requirements. It was found that there was considerable room for improvement at certain times at some receiving points. The Chairman of the Asparagus Marketing Board and the Director of the Inspection Service visited the main asparagus production areas of New Jersey to view the method of grading used in that state. During the winter an asparagus grading committee, consisting of growers and processors, was formed and a new set of grades for this crop was approved, which formed the basis for negotiations. A program of asparagus inspection using the new grades was planned for the 1960 season.

Strawberry Grading—An inspector was again supplied at the Norfolk Berry Growers' Association in Simcoe to check strawberries being delivered for processing. This program tended to improve the quality of fruit delivered.

Cherry Grading—Again during the 1959 season E. D. Smith & Sons Ltd. requested an inspector to grade both sweet and sour cherries received at Winona. Growers and the processor were pleased with the results.

Potato Grading—The new Salada Shiriff Horsey potato flake plant at Alliston contracted with growers on a graded basis. Inspectors checked samples from each load

of potatoes delivered for percentage of No. 1 grade. Dry matter tests for each load were also made and growers were paid a bonus for higher dry matter. Approximately 12 million pounds of potatoes were received, stored, and ultimately processed into a very satisfactory product. The operation of this plant will have a tremendous impact on the potato industry of the province.

Other Crops—Farm Products Inspectors were from time to time requested to inspect other regulated fruit and vegetable crops being delivered for processing in cases of dispute as provided for in marketing agreements. All disputes were settled without difficulty.

Inspection of Honey

Dominion and Provincial Inspection Services share in the application of grading regulations on honey produced, processed packed, sold or offered for sale in Ontario. The Federal Inspection Service is concerned mainly with the registered packing plants and export, import and interprovincial movement of honey. Detention action on this product was very limited and generally producers and packers have been doing an excellent job.

Licensing of Dealers

During the 1959-60 fiscal year there were 975 fruit and vegetable dealers licensed in the province. 2,175 windshield markers were issued for trucks used for transporting produce.

Acreage Surveys

The following surveys were carried out at the request of the industry.

- 1. Marsh vegetable acreage surveys—Bradford, Grand Bend, Thedford, Point Pelee and Erieau.
- 2. Greenhouse survey—Essex County.
- 3. Highland vegetable acreage survey—Essex County (in co-operation with Federal Department).
- 4. Greenhouse survey—Bradford Marsh area.

The Marsh vegetable acreage surveys under (1) above are carried out each year while the other surveys are conducted approximately every 5 years. These statistics are useful to the industry and to the Department as a check against production figures in statistical reports.

Checking of Produce Containers

The Farm Products Inspection Service is responsible for the enforcement of the standard container regulations. However, provision is made for the use of new containers on an experimental basis. Several different types of packages were tried last season and careful observations made and recorded by the inspectors. The search for new, more efficient, more colourful and more protective containers for the marketing of produce is a continuing one.

Shipping Maturity Testing For Fruit

Proper maturity is most important in the marketing of soft tree fruits. Work was continued in the Niagara Peninsula to determine the desirable maturity for peaches, plums, pears and cherries. In this area maturity meetings were held each Monday morning during the main season. These discussions are valuable in effecing a more uniform interpretation of regulations. The first appearance of the

different varieties were discussed and the maturity required for each. The use of the peach pressure tester was continued and average pressures recorded.

Grape Maturity Experimental Work

Testing was continued on refractometer readings for grapes, (percentage of sugar). It would appear that a refractometer reading of fourteen (14) is too high for an average grape season. It is the intention to continue this work in 1960 so that it might be possible to recommend a definite refractometer reading in the future.

Electronic Determination of Colour on Processing Tomatoes

Considerable help was given to the research work carried out by the Horticulture Department, O.A.C., to determine the most suitable Agtron "E" readings for No. 1 and No. 2 Grade tomatoes for processing. The experimental work was related to actual grading on receiving station platforms and provided the basis for readings to be used in 1960.

Early Potato Maturity Investigations

This program last season consisted of enforcing new regulations requiring increased maturity on early potatoes being harvested, packed and shipped from Essex County. Excellent co-operation was obtained from growers and as a result potatoes were harvested more carefully and at a more reasonable maturity, resulting in a higher quality product reaching the markets and the consumer.

Fruit and Vegetable Price Survey

Prices paid to growers for the various fruit and vegetable commodities were obtained each week in the main production areas as requested by the Economics and Statistics Branch of the Department.

Shipment Reports

Statistics covering the shipment of fruit and vegetables by freight, express and truck from the closed inspection areas were compiled and reports issued to members of the industry.

Ligison & Committee Work

The Farm Products Inspection Service continued to work closely with the industry in promoting the proper harvesting, handling, grading, packaging and marking of produce. Head office and supervising personnel attended local provincial and national industry meetings to take part in discussion of problems developing from the regulatory nature of the work.

THE PLANT DISEASES ACT

The following work was carried out during the 1959-60 fiscal year by the Farm Products Inspection Service:

enforcement of the regulations, under The Plant Diseases Act, respecting (1) Plant disease inspection of all nurseries and premises of dealers in nursery stock, (2) Apple maggot inspection in requested plant disease control areas, (3) Variety certification of tree fruits in nurseries on request, (4) Raspberry certification of raspberry plant growers on request, (5) Assisting Vineland Experiment Station with strawberry certification of strawberry plant growers on request, (6) Assisting the Division of Plant Protection, Canada Department of Agriculture with the trapping and control program of Japanese beetle, (7) Assisting the Crops Branch in enforcing bacterial ring rot regulations. The major part of this work is covered in a four month period of the growing season.

The annual inspection for plant diseases was carried out in 360 nurseries and premises of dealers in nursery stock with 10.3% showing some degree of plant disease infestation.

Number of fruit trees inspected for plant diseases	1,429,585
Number of fruit trees with San Jose Scale	96
Number of fruit trees with Fire Blight	4
Number of fruit trees with Black Knot	
Number of ornamentals inspected for plant diseases	1,908,816
Number of ornamentals with San Jose Scale	274
Number of ornamentals with Fire Blight	1
Number of ornamentals with Black Knot	3

Inspectors also advised nurserymen of the presence of other insects and diseases and in particular juniper scale and juniper webworm.

The usual June and late July inspections of apple maggot plant disease control areas was carried out to determine whether apple orchards qualified for preharvest inspection through control of unsprayed trees in the 300 yard surrounding area and application of sprays on the orchards concerned. Orchards of 40 growers failed to qualify. Assisting the Canada Department of Agriculture the preharvest inspection in early September indicated that 178 growers operating 235 blocks of orchards showed infestation of apple maggot in one or more varieties in 133 blocks or 56.6%.

Inspection of fruit trees in the nursery row for trueness-to-name of variety was carried out on request in 20 nurseries. Approximately 455,400 trees were checked and 2,718 mixtures were found, or 0.6% of the total inspected.

For raspberry certification thirteen varieties of red raspberry plants and one purple raspberry variety were certified in the plantings of 17 plant growers. The plantings of five other plant growers were refused certification for one or more of the following reasons: virus disease, mixture of varieties, age of planting. An estimate of the number of canes certified: red raspberry—1,239,200 canes, purple raspberry—55,000 canes.

The strawberry plant certification program requires Farm Product Inspector assistance on field inspection of proposed planting areas and the plantings themselves. Since the program is in its early stages three inspections were carried out jointly with the Vineland Experiment Station in the fall of 1959 to check on proposed planting areas for the available foundation stock.

The Japanese beetle population survey and control program was carried on as a joint effort with the Plant Protection Division, Canada Department of Agriculture. Seven trap attendants were provided by the Inspection Service during July, August and September, to check and recover beetles from traps set out by the Plant Protection Division in Hamilton, St. Catharines Niagara Falls, Fort Erie and Windsor. A sufficient number of beetles were captured to warrant a soil-treating program on approximately 100 acres in the cities named above.

In assisting the Crops Branch in the enforcement of potato bacterial ring rot regulations, 68 visits to 49 growers were made by six members of the inspection staff.

Licensing under The Plant Diseases Act is confined to licensing of nurseries and dealers in nursery stock. During the past year licences were issued to 293 nurseries and 74 dealers in nursery stock,

THE CO-OPERATIVE LOANS ACT

Under this Act loans up to a maximum of \$100,000.00, secured by a first mortgage, may be made to agricultural co-operative organizations to assist them in financing capital expenditures necessary to provide facilities for the grading, cleaning, packing, storing, drying, processing or marketing farm products.

During the year ended March 31st, 1960, eleven loans totalling \$470,198.00 were approved, as listed below, compared to seventeen loans totalling \$435,336.00 made during the year ended March 31st, 1959.

1	Halton Co-operative Supplies	—Feed Mill	\$ 20,000.00
	Simcoe District Co-operative Services	—Feed Mill	90,000.00
9	Northumberland Fruit Growers' Cold		
٥.		-Cold Storage	83,700.00
	Storage Co-operative Limited		
4.	Elgin Fruit Growers' Co-operative	Cold Storage	22,500.00
5.	Norfolk Co-operative Company Limited	—Feed Mill	40,000.00
6	Osgoode District Co-operative Services Inc.	—Feed Mill	20,000.00
		—Feed Mill	60,000.00
	Newmarket District Co-operative		/
	Drayton District Co-operative	—Feed Mill	20,000.00
9.	Oxford Farmers Co-operative Produce		
	Company Limited	—Feed Mill	28,998.00
10.	Hensall District Co-operative	—Feed Mill	20,000.00
	Co-operative Regionale de Nipissing	—Feed Mill	65,000.00
11.		—reed Will	,
	Sudbury Limited		
		TOTAL	\$470,198.00

At the end of the fiscal year there was outstanding through loans and guaranteed bank credits to 93 co-operatives \$2,812,240.00 compared to \$2,786,460.00 to 93 co-operatives at the end of the previous fiscal year.

THE GRAIN ELEVATOR STORAGE ACT

All Ontario Grain Dealers accepting grain from producers for storage for the producers' account are required each year to be licensed and to comply with the tems of The Grain Elevator Storage Act.

The purpose of the Act is to ensure that the licensed grain dealer has enough grain on hand or acceptable warehouse receipts to cover all storage grain and to provide that at no time shall the licensed grain dealer use or pledge farmer stored grain for his own account.

The practice of Ontario cash grain growers making delivery of wheat, dry beans or corn to the elevator operator at harvest time and arranging for storage in order to sell at a future date has developed to the point where most grain dealers now provide this service. Winter wheat, white beans, soya beans and corn are the principal grains stored, and periodic inspection of the storage facilities, general elevator condition, and insurance coverage, together with a verification of the record of stored grain against stocks on hand, is provided for and carried out in the administration of The Grain Elevator Storage Act.

THE FARM PRODUCTS CONTAINERS ACT

Under this Act licence fees in the amount of 1% added to the manufacturer's selling price of all wooden and paper containers manufactured and sold for use in the marketing of fresh fruits and vegetables produced in Ontario have been levied and paid to the Ontario Fruit and Vegetable Grower's Association since November 1st, 1947. The fees received during the fiscal year ended March 31st, 1960, amounted to \$31,484.88 and the total fees received to-date by the Association since the levy was imposed amount to \$380,021.25.

Also under this Act licence fees in the amount of 5% added to the manufacturer's selling price of all cans and paper containers manufactured and sold for use in the marketing of honey produced in Ontario were levied and paid to the Ontario Beekeepers' Association beginning on April 1st, 1948. The total fees received by the Association to the fiscal year ended March 31st, 1958 amount to \$127,803.60. During 1958 difficulties developed within the industry as a result of the methods adopted by some bee keepers to avoid paying the licence fee. The Ontario Beekeepers' Association therefore recommended that the levy be discontinued so no funds have been collected since 1958.

Ontario Live Stock Branch

Broadly speaking, there is very little that the individual producer can do to influence the general price level for live stock and live stock products. Nevertheless, he can be reasonably sure that a top quality product invariably finds a more ready market and commands a higher price than an inferior one or even an average one. Consequently it would appear that the individual producer has the opportunity of expanding his outlets and increasing his gross returns by successfully producing the best. Even so, the achievement of this objective may not suffice to yield a profit. Since net returns or profit are represented by the difference between selling price and cost of production due consideration must be given to the adoption of cost saving practices. In the final analysis quality production and reduced costs are fundamental to a successful live stock industry.

Accordingly, the program of the Ontario Live Stock Branch has been formulated with this principle in mind. Included in the program are projects designed to identify superior sires and extend their use, disease control programs and many others, details of which will be found in this report.

These programs fall into two categories namely (a) the administration of provincial statutes, and (b) promotional and educational activities.

ADMINISTRATIVE WORK

Brucellosis Control Act

This Act makes it mandatory for all female calves to be vaccinated after reaching the age of four months but before becoming 11 months old. Every owner may have his calves vaccinated by the veterinarian of his choice, with the veterinarian being reimbursed for his services by the Live Stock Branch. In 1959, 406,736 calves were vaccinated in Ontario, at a cost of \$544,545.47. This figure includes the cost of providing vaccination certificates, ear tags and other items as well as payment made to veterinarians.

In cases where calves die from shock following vaccination, owners may be compensated in amounts ranging up to \$100.00 for a pure bred calf and up to \$50.00 for a grade calf. During the year 55 deaths were reported and the owners were reimbursed in the amount of \$3,780.00.

Although the Brucellosis Control Area plan is administered by the Health of Animals Branch of the Canada Department of Agriculture, members of the Ontario Live Stock Branch took an active part in educational programs which preceded the establishment of such areas. As a result cattle owners in all countries and in the majority of districts have petitioned to have their cattle tested under this plan. Between March 4th, 1958, the date testing was initiated in Ontario, and March 31st, 1960, the end of the last fiscal year, 18 counties had attained a certified Brucellosis-free area status. Before reaching this stage the incidence of Brucellosis was reduced to less than one-half of one per cent of the cattle and the number of infected herds to less than five per cent of the total. The counties certified prior to Mrch 31st, 1960, are Oxford, Prince Edward, Halton, Grenville, Dundas, Stormont, Glengarry, Carleton, Lanark, Leeds, Brant, Wentworth, Peel, Elgin, York, Prescott, Lincoln and Waterloo.

On the basis of tests in progress, over fifty per cent of the counties should be certified before the end of 1960.

Warble Fly Control Act

During 1959-60 this Act was in force in the 263 townships in which by-laws had been passed by councils in accordance with the wishes of the majority of cattle owners. In these municipalities owners were obliged to treat all cattle showing signs of warble grubs. The first treatment was applied between April 10th and 18th, with subsequent treatments being applied at intervals of 3-4 weeks until warble grubs ceased to appear in the backs of the cattle, or until May 31st, whichever occurred first.

Although both the brush and spray methods of treatment were permitted, spraying proved to be the more popular, particularly in beef cattle areas. According to reports submitted by inspectors the 1959 program resulted in first treatments being applied to 956,109 cattle and subsequent treatments to 831,156.

Townships operating programs under this Act qualified for grants as follows:

(a) 50% of the salary and travelling expenses of the inspector, and

(b) 50% of the cost of warble fly powder used in the treatments.

In 1959-60 the total amount paid to municipalities was: \$71,567.54.

During the past two years several systemic insecticides have been approved for use in Canada. One such product, Co-Ral, is credited with being effective in the control of both lice and warble grubs. Applied as a spray in the fall of the year it penetrates the hide and locates the tiny larvae, killing them before they have a chance of causing much discomfort to their hosts or damaging the hides. In an effort to obtain information about the effectiveness of this product the Live Stock Branch co-operated with the distributor by arranging for several hundred cattle to be sprayed in late October and by supervising the spraying operation. On each premises a number of cattle were left unsprayed to serve as checks. A member of the Branch staff will check all cattle included in the project in April and May, 1960, with a view to determining the number of grubs in the treated cattle as compared with those left untreated.

Live Stock Community Sales Act

Under the provisions of this Act, which came into force on July 1st, 1959, no person may operate community sales without a licence from the Live Stock Commissioner. Included in the conditions of licensing are the following: operators must be bonded, and premises must conform to certain prescribed standards.

A veterinarian, engaged as a casual employee of the Ontario Live Stock Branch, serves as inspector at every sale. Any live stock which in his opinion is infected with disease is not eligible to enter the building. Inspections of the premises and the records of each operator are made from time to time by regular members of the staff of the Live Stock Branch.

In 1959, 64 sales operated in the province.

Artificial Insemination Act

This Act provides for the licensing of Artificial Insemination Centres, and of technicians employed by such centres; also prescribes the minimum standards for buildings, equipment and bulls.

In 1959, licences were issued to 14 A.I. Centres, 8 of which are located in Old Ontario and maintain bull studs. The other 6, located in Northern Ontario, purchase the semen used in providing an insemination service. In addition licences were issued to 265 technicians employed by these centres.

The volume of business registered a further increase in 1959 as shown in the following table:

			No. Co	ws Bred
	Name of Gentre		1958	1959
1.	Oxford & District C.B. Ass'n	. Woodstock	96,442	108,771
2.	Central Ontario C.N. Ass'n	. Maple	88,254	92,560
3.	Waterloo C.B. Ass'n,	. Waterloo	69,654	74,902
4.	Eastern Ontario C.B. Ass'n	. Kemptville	54,195	61,015
5.	Hamilton District C.B. Ass'n	Hannon	38,450	40,338
6.	Quinte District C.B. Ass'n	Belleville	38,641	40,325
7.	Lambton C.B. Ass'n	Wyoming	11,402	10,353
8.	Essex C.B. Ass'n	Essex	8,170	8,404
9.	Rainy River C.B. Ass'n	Emo	1,163	1,627
10.	Temiskaming C.B. Ass'n.	New Liskeard	1,499	1,624
	Cochrane C.B. Ass'n		747	794
12.	Algoma C.B. Ass'n.	Sault Ste. Marie	532	322
13.	Dryden C.B. Ass'n	Dryden	251	298
14.	Porcupine C.B. Ass'n	Timmins	253	259
15.	Thunder Bay C.B. Ass'n	Fort William	554	
			410,207	441,592

Increase in 1959, 31,385 services or 7.6%.

The Thunder Bay C.B. Association became associated with the Central Ontario C.B. Association during 1959.

SERVICES ACCORDING TO BREEDS ARE SHOWN IN THE FOLLOWING TABLE:

	Breed	No. Services	% of Total
1.	Holstein	257,977	58.20
2.	Jersey	22,471	5.06
3.	Ayrshire	9,791	2.22
4.	Guernsey	9,732	2.20
5.	Hereford	87,147	19.62
6.	Shorthorn	23,482	5.20
7.	Aberdeen Angus	11,012	2.38
8.	D.P. Shorthorn	9,055	2.04
9.	Red Poll	322	0.72
10.	Charolais	8,111	1.82
11.	Breed unspecified	2,492	0.54
		-	
		441,592	100.00

Prior to Sept. 1st, 1959, licensed A.I. units were eligible for grants to assist in the purchase of bulls on the basis of 33 1/3 per cent of the purchase price up to a maximum of \$600 per bull. Since then the grant has been at a reduced rate of 20 per cent of the purchase price but the maximum grant has remained unchanged. One other change became effective on that date, namely that grants on beef bulls were restricted to performance tested bulls with average daily gains on test of 2.50 pounds or more.

Because of the high cost of providing service in Northern Ontario, A.I. centres operating in that area may qualify for grants at the rate of \$2.00 per cow inseminated.

The total amount paid in grants to A.I. centres during the fiscal year was \$53,120.26.

The Stallions Act

Under the provisions of this Act all stallions of the heavy draught breeds which are being offered for public service must be inspected, approved and enrolled. Generally speaking, inspections are made at three year intervals, however enrollment is an annual requirement. The number of stallions in the province has declined as the horse population decreased, reaching an all time low of 172 in 1959.

Stallions are classified in three grades: A, B and C. The owners of those in the two top grades are eligible for premiums on the basis of \$3.00 and \$2.00 respectively for each mare left with foal. The total amount paid in premiums during 1959 was \$9,539.00.

Rabies Indemnity

Throughout 1958 and the early part of 1959, a great many Ontario farmers suffered losses on account of live stock dying from rabies. The situation became so critical in many areas that government action was deemed necessary. Accordingly, the Ontario Government entered into an agreement with the Federal Government and County Councils, under which the two senior governments agreed to share equally 80 per cent of the losses in counties that would assume the remaining 20 per cent.

In the operation of this program a county wishing to participate is obliged to pass a by-law, appoint a valuer and reimburse owners in the amount of his award. The province refunds to the county 80 per cent of the amount paid to live stock owners and later collects one-half the amount so paid from the Federal Government. Indemnities are paid only in cases where the cause of death is certified as rabies by an officer of the Health of Animals Branch, Canada Department of Agriculture, and all awards are based on a schedule of values established by agreement between the two Departments.

During the year payments totalling \$217,703.40 were made to municipalities. One-half of this amount has been or will be recovered from the Federal Government.

PROMOTIONAL OR EDUCATIONAL WORK

Advanced Registry for Beef Cattle

Subject to the approval of the Minister, all decisions respecting this policy are made by the Advanced Registry Board, which is comprised of representatives of the various beef breed associations, the Beef Producers' Association, the Ontario Agricultural College, the Federal Department of Agriculture and the Ontario Department of Agriculture. The Live Stock Commissioner serves as secretary of the Board and administrative officer.

The purpose of the policy is to obtain information about the performance of young bulls that appear destined to become future herd sires. The factors considered are rate of gain on test, lifetime gain and, in the case of bulls tested at stations, feed efficiency.

During the year a new station was opened at the Western Ontario Experimental Farm, Ridgetown; thereby increasing the number of stations to three, the other two being located at the O.A.C., Guelph, and the Kemptville Agricultural School respectively. These stations have a combined capacity for testing about 180 bulls annually. Because of the increased interest in testing, not more than one bull out of every 6 to 8 nominated can be accommodated there. Nevertheless, every breeder participating in the program should have the opportunity of testing some bulls at a station, if not every year, at least at 2 or 3 year intervals.

Bulls are started on test when approximately 8 months of age. Since the test period covers 168 days, they are about $13\frac{1}{2}$ months old when the test is completed.

A summary of the results of tests completed during the fiscal year 1959-60 is contained in the following table:

No. tests completed	990	
Av. starting weight	590.0	lbs.
Av. finishing weight	1,000.3	23
Av. total gain	410.2	22
Av. daily gain	2.44	23
Av. daily lifetime gain	2.27	22
Av. feed lb. gain (station tests only)	5.13	33

An analysis, based on rate of gain on test, is shown in the following table:

No.	gaining		96
No.	gaining	2.00 - 2.29 lbs. per day	211
No.	gaining	2.30 - 2.49 lbs. per day	251
No.	gaining		251
No.	gaining		.18
No.	gaining	over 3.00 lbs. per day	63

Bull Premium Policy

As the result of a revision in this policy premiums are restricted to performance tested bulls and the amount of the premium has been reduced to 20% of the purchase price, up to a maximum of \$150.00. In this particular context a performance tested bull refers to a bull that gained 2.30 pounds per day on test, has a lifetime gain of 2.15 pounds per day and is approved from the standpoint of type and conformation. An exception to these requirements is made in the case of bulls out of first-calf heifers, the minimum lifetime gain for such bulls being 2.05 pounds per day.

The policy applies when bulls are purchased in sales sponsored by the Ontario Beef Cattle Improvement Association, County or district breeders' clubs or private breeders. It also applies when performance tested bulls owned by breeders in the territorial districts are sold by private treaty to residents of those districts.

During the year the total amount paid in premiums under this policy was \$78,721.41, these payments being made to the purchasers of 852 bulls.

The Ontario Bull Sale

This sale, held annually under the sponsorship of the Ontario Beef Cattle Improvement Association, is designed to distribute good beef bulls in the province of Ontario. All bulls entered in this sale are subject to the inspection of a culling committee and only those considered suitable for use as sires are included in the offering. A summary of the 1960 sale, held during the first week of March, appears in the following table:

	Herefords	Angus	Shorthorns
No. bulls entered	164	22	97
No. bulls withdrawn	17	1	4
No. bulls culled	29	0	21
No. bulls not sold	. 8	2	28
No. bulls sold	110	19	44
Av. price	\$ 491.82	\$422.63	\$ 414.65
Top price	\$1,510.00	\$750.00	\$1,400.00
Av. top five	\$1,289.00	\$607.00	\$ 885.00

The number of bulls sold to buyers from outside Ontario was higher than usual, 10 being bought for shipment to Rumania, 3 to United States and 2 to New Brunswick.

Dairy Herd Improvement Associations

In an effort to extend the benefits of milk recording to dairymen who have been denied the privilege of participating because of the non-existence of vacancies in the dairy herd improvement associations serving their respective areas, two significant changes in the policy were authorized during 1959. First, all members whose herds are comprised of more than 80 per cent pure breds were declared ineligible for further participation for the obvious reason that such persons can qualify for enrolment in R.O.P. Secondly, the owners of herds whose average production during a three year period has been below 80 per cent of the average of all herds in their associations are being dropped from membership. The adoption of these new rules will create a considerable number of vacancies, thereby making it possible for new members to join the existing associations.

The owners of some predominantly pure bred herds have signified a desire to remain as members under the joint D.H.I.A.-R.O.P. plan for one year. During that period of time regular monthly tests will be made by D.H.I.A. fieldmen, and several check tests will be made by R.O.P. inspectors. At the end of one year these dairymen will transfer to R.O.P., thus any records that are in the process of being made can be completed without interruption.

The statistical highlights of the 1959 program are summarized in the following table:

No.	Associations	59	
No.	Herds enrolled		
No.	Cows tested	26,025	
Av.	number cows per herd	23	
Av.	production per cow—milk	9,968	lbs.
	fat		lbs.
Av.	butter fat test	3.60	%

Since a high percentage of the participants of D.H.I.A. are members of artificial breeding associations the records made in these herds are being used extensively in the A.I. bull proving program. Because the majority of cows in these herds are not fed for maximum production, an analysis of their records provides the means of making a very accurate appraisal of a bull's ability to transmit milk and butter fat. I.B.M. equipment installed at the Animal Husbandry Department, O.A.C. Guelph, the rental of which is paid for by the Live Stock Branch, is used in making these analyses.

Dairymen who want to participate in a milk recording program but who are unable to obtain service under R.O.P. or D.H.I.A. have been encouraged to enrol under the weigh-a-day-a-month policy. This provides a method of securing reasonably accurate records of each cow's production. Inasmuch as production per cow is one of the most important factors in determining profit, the information provided by this plan is quite valuable in identifying the cows that should be culled.

Demonstration Pasture Farms

Demonstration work was continued on the five beef pasture farms established in 1950. The benefits to be derived from seeding with approved mixtures and from regular applications of commercial fertilizer to good stands of pasture are becoming quite pronounced. Most of the demonstration farms are carrying three times as many cattle as they carried before steps were taken to improve them. As a consequence farmers in the areas where they are located are beginning to adopt similar methods of pasture improvement.

A new pasture project based on the principle of increasing production by eliminating weeds through spraying and applying fertilizer to the existing stand of grass was initiated on Manitoulin Island. In addition, plans were formulated for

establishing demonstration permanent pasture plots in Parry Sound and Rainy River, two districts where feeder cattle are produced in fairly large numbers.

Assistance to pure bred sales of live stock

In an effort to encourage the distribution of good live stock, grants are made available to breeders' clubs that undertake to sponsor consignment sales. In all cases the animals entered are inspected by an inspector named by the Live Stock Commissioner and only those approved are eligible for inclusion in the offering. The basis for grants is as follows:

- (a) cattle sales—\$5.00 per head sold, up to a maximum of \$200 per sale.
- (b) swine and sheep sales—\$2.00 per head or the cost of operating the sale, whichever is the lesser amount.

A summary of sales held in 1959 follows:

Cattle Sales

			Amount of
Breed	No. Sales	No. Cattle Sold	Grants Paid
Holstein	9	309	\$1,440.00
Ayrshire	3	122	595.00
Guernsey	6	262	1,145.00
Jersey	germany.	Disease of the Control of the Contro	manual and a second
Shorthorn	18	477	2,210.00
Hereford	13	307	1,535.00
Aberdeen Angus	6	162	805.00
(Combined beef breeds	2	52	260.00)
,		included in	above summary

Swine Sales

Sponsoring organization	No. head sold	Av. price	Grant paid
South Western Ontario Yorkshire	36	\$115.34	\$72.00
Zone 2 Yorkshire	34	95.80	68.00
Haldimand District P.B. Beef Cattle & Swine	16	77.96	32.00
Dufferin P.B. Beef & Swine	12	98.15	24.00
Western Ontario Landrace	25	80.18	50.00
Ontario Swine Breeders	49	110.92	98.00
Wellington A.R. Yorkshire	21	91.31	42.00
Ontario Landrace		115.08	58.00
Western Ontario Yorkshire	24	115.20	48.00

Sheep Sales

Sponsoring organization	No. head sold	Av. price	Grant paid
Ontario Sheep Breeders	28	\$ 61.97	\$28.00
Grey-Bruce	67	45.80	67.00
Ottawa Valley	77	41.20	77.00

Special Live Stock Shows

Despite the emphasis being placed on performance the friendly competition engendered by live stock shows still plays an important role in live stock improvement. In an effort to stimulate greater competition than might otherwise be the case the Live Stock Branch has encouraged breeders' clubs to organize special shows on a regional basis. As the name implies, entry in such shows is restricted to the area served by the club. Grants are available to clubs sponsoring such shows on the following basis:

- (a) Cattle shows—20 per cent of the prize money paid out up to a maximum of \$100.
- (b) Swine and Sheep shows—25 per cent of the prize money paid out, up to a maximum of \$100.

In the majority of cases these special shows are held at regularly scheduled fairs. While the host organization provides the greatest percentage of the prize money, it is customary for the sponsoring club to supplement the offering with a contribution from its own treasury.

Following is a summary of special shows held in 1959:

(a) CATTLE SHOWS

Breed	No. Shows	No. Entries	No. Animals Shown	Total Grants
Holstein	43	5,836	4,809	\$ 3 , 906.75
Ayrshire	19	1,707	1,418	1,480.20
Jersey		1,735	1,389	1,356.69
Guernsey	14	1,086	843	1,080.90
Shorthorn	8	856	676	759.20
Hereford	7	642	487	652.80
Angus	4	354	282	369.00
D.P. Shorthorn	1	72	61	86.40
(b) Swine Shows				
Yorkshire	7	505	393	579.25
Berkshire	1	54	44	67.50
Tamworth	1	81	66	100.00
(c) SHEEP SHOWS	5	1,035	899	500.00

In addition to the special shows listed above the Branch makes grants to horse breeders' associations to assist in financing special horse shows. Generally speaking, such grants are on the basis of 50 per cent of the prize money paid out, up to a maximum of \$300. However, the grant to large shows may be increased to \$500. provided the sponsor obtains a similar amount from the council for the county in which the show is held.

Grants made in 1959 were as follows:

Brooklin Spring Horse Show	\$300.00
Toronto Horse Show	300.00
Uxbridge Horse Show	300.00
Elgin Horse Breeders' Ass'n	210.50
Middlesex Heavy Horse Show	100.00
St. Catharines Riding & Driving Club	500.00
Linwood Horse Show Ass'n	300.00

Boar Premium Policy

This policy provides for the payment of premiums to farmers who purchase progeny tested boars of approved type which originate in herds that are free from visible evidence of Rhinitis. The inspections are made by staff members of the Live Stock Branch. Premiums are on a sliding scale, ranging from \$25.00 to \$35.00, depending on the record of the dam.

In 1959 premiums amounting to \$18,955.00 were paid to the purchasers of 600 boars.

Bacon Hog Club Policy

This policy is designed to enable farmers, residing in areas where very few breeders are located, to obtain the services of good boars. Such boars are supplied on a rental basis in cases where six or more farmers residing in a community organize a club. One of the members is appointed caretaker, and he retains the service fees as compensation for looking after the boar. When boars have outlived their usefulness in clubs they are sold, with the proceeds of sale being remitted to the Branch. Interest in this policy has declined since the premium policy was introduced

—presumably because the majority of farmers prefer to own their own boars. Nevertheless there were 26 clubs operating in the province in 1959.

Ram Premium Policy

Under this policy farmers who purchase approved rams at consignment sales held under the sponsorship of breeders' clubs are eligible for premiums on the basis of 20 per cent of the purchase price, up to a maximum of \$25.00. In 1959, premiums amounting to \$858.60 were paid to the purchasers of 73 rams.

Live Stock Assistance in Northern Ontario

This policy provides for the payment of grants in aid of transportation costs to Northern Ontario farmers who purchase approved live stock in Old Ontario. In 1959 the policy was amended to include freight assistance payments on live stock purchased by farmers in Thunder Bay, Kenora and Rainy River Districts from sources in Western Canada. In all cases payments are on the basis of a graduated schedule, the highest payments being made to farmers who are obliged to ship the greatest distances.

Destination	No. Head	Total Grant
Algoma	207	\$2,884.14
Cochrane	160	2,440.86
Kenora	19	190.00
Manitoulin	314	3,350.49
Muskoka	30	247.00
Nipissing	175	1,772.50
Parry Sound	139	1,173.41
Rainy River	50	1,284.59
Sudbury	149	1,637.77
Temiskaming	45	521.70
Thunder Bay	120	2 ,202.13

For the most part the cattle comprising these shipments were dairy cows, presumably purchased by farmers with fluid milk contracts. However, a considerable number were beef cows or heifers acquired by persons intent on establishing beef herds.

Grants are available to the purchasers of bulls, boars and rams on the basis of 50 per cent of the freight or express charges. Several buyers of bulls and rams took advantage of this provision in the policy.

The grants paid under this policy totalled \$17,704.59.

Subsidized Veterinary Service

In order to encourage veterinarians to establish practices in the districts of Northern Ontario the Live Stock Branch offers to match any contributions made by local organizations, up to a maximum of \$1600. on the understanding that the total amount subscribed in this manner will be paid to the veterinarian in quarterly instalments. In return the veterinarian agrees to provide service throughout the district at fees agreed upon by negotiation between himself and the local committee. As a result of the adoption of this system those residing at a considerable distance from the headquarters of the veterinarian are assured of his services at rates similar to those paid by the farmers who are more favourably located. Without the benefit of this subsidy it is doubtful if many veterinarians would establish practices in the north, particularly in districts that are predominantly rural. Apparently the subsidy has been effective in achieving the objective of the policy as evidenced by the fact that 13 veterinarians are now practising in the north. The total amount paid in subsidy during 1959 was \$21,600.00.

General

In addition to performing the duties associated with administration of Acts and attending to details pertaining to the various live stock policies, members of the Live Stock Branch staff were called upon to address many educational meetings and to serve as executive officers of a large number of associations, notably the Ontario Cattle Breeders' Ass'n., the Ontario Sheep Breeders' Ass'n., the Ontario Swine Breeders' Ass'n., the Ontario Beef Cattle Improvement Ass'n., and the Advanced Registry Board for Beef Cattle.

Ontario Telephone Authority

The Ontario Telephone Authority was organized under the provision of The Telephone Act, 1954, and is charged with two main duties.

- (1) To administer the Act as it relates to the operation of Telephone Systems which come under the jurisdiction of the Province of Ontario.
- (2) To provide staff for the purpose of supplying these systems with engineering, accounting and other technical assistance pertaining to telephone problems with the end in view of improving telephone service in the Province, particularly in the rural areas.

ORGANIZATION

The overall organization may be divided in accordance with the above functions into —

- (a) The Ontario Telephone Authority
- (b) The Telephone Technical and Commercial Branch.

The Ontario Telephone Authority

The Ontario Telephone Authority is now composed of five members appointed by the Lieutenant-Governor in Council and a permanent Secretary. Three of the members are actively engaged in the telephone industry and come from different sections of the province. The two other members are permanent employees of the Department of Agriculture and serve as Chairman and Vice-Chairman. The Vice-Chairman acts in the absence of the Chairman and attends regular meetings of the Authority. The Chairman serves on a full-time basis and is also Director of the Branch.

The Authority meets once each month, or oftener if necessary, at the call of the Chairman to consider all matters which require approval under the provisions of The Telephone Act, 1954, These include applications for approval of revised rate schedules, borrowing and other by-laws, special resolutions, capital expenditures, sales and mergers, franchise by-laws, long distance traffic agreements, etc.

Members of the Authority also hold meetings with telephone system officials both in the office and in the field in order to assist them in reaching decisions on major problems affecting the operation of their systems. The members also accept as many invitations as it is possible for them to handle, to attend subscribers' and shareholders' annual meetings and their experienced advice is always appreciated.

Regular meetings are held with officials of the Bell Telephone Company in order to discuss problems that affect both this Company and the Independent Systems and meetings are also held with officials of the Hydro-Electric Power Commission and other government departments in order to work out agreements affecting the telephone systems.

The Ontario Telephone Authority also holds hearings in cases where there is public opposition to a rate increase or other action proposed.

During the past year (April 1, 1959 to March 31, 1960) a total of 134 Orders were issued by the Authority as follows:

Summary of Orders	
For approval of distribution of assets of municipal systems	1
For approval of telephone charges	57
For approval of Special Resolutions	5
For approval of agreements for interchange of service	7
For approval of the sale of telephone systems or portion of	
For approval of municipal by-law granting right-of-way.	
For approval of company by-laws	3
For Order prescribing date for holding annual meeting of	
For authority to issue stock, bonds, or other evidence of in	
For authority to use depreciation fund monies for constru	
Order cancelled and application withdrawn	1

The Telephone Technical and Commercial Branch

The Chairman of the Ontario Telephone Authority is also the Director of the Branch. The work of the Branch is divided between the Engineering Division which consists of two Professional Engineers, four Engineer's Assistants and a Clerk-Stenographer and the Comercial Division which consists of one Executive Officer, one Accountant and a Clerk-Stenographer.

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Technical and Commercial assistance provided by the Branch has been responsible for a marked improvement in the service being provided by many local telephone systems and, in a number of cases, complete systems have been rebuilt in accordance with plans designed by the Branch. These systems are now providing modern common battery or dial service and several others are in the process of converting to an improved type of service.

When a telephone system requests assistance in planning a rebuilding program with a view to converting to dial service, the engineering and commercial divisions co-operate on a preliminary study to determine the approximate cost of the project and whether or not the expenditure would be warranted by savings in operator expense and by increased revenue. If the system then decides to proceed, a detailed field study is made and, based on the information obtained, complete engineering plans are prepared covering the pole and wire plant and specifications for central office equipment. Assistance and advice is continued until the work is complete and the new system is working satisfactorily. Other systems have been given assistance in moving telephone lines for highway widening, procuring joint-use agreements with the Hydro-Electric Power Commission, making additions and changes in cable, wire plant and central office equipment. The Engineer's Assistants give "on the job" instruction on all phases of the work especially to smaller systems which are unable to maintain a staff of fully-trained personnel.

The following is a summary of some of the activities of the engineering staff during the past fiscal year:

Item	Number
Central offices engineered and cut into service: Dial	3
Manual	4
Systems for whom field surveys were made and recommended program	
submitted	
Systems for whom detailed plans were engineered and provided	10
Systems which received assistance in re-arranging telephone plant as	
required by road construction	17
Studies and reports re Department of Agriculture telephone service	2
Field surveys and reports on extending service to unserved areas	3
Systems for whom planning was undertaken and is continuing	

The commercial division is prepared to assist telephone systems with general business and accounting advice. The staff is qualified to instruct the Secretaries of systems in improved bookkeeping methods and assist them to establish new systems of records. The time of one man is devoted almost exclusively to this phase of the work and excellent results have been achieved.

A large portion of the work of the commercial division consists of answering queries received both by mail and in person from the various systems, concerning proper procedures to follow when they wish to take action under the provisions of The Telephone Act, 1954, The Corporations Act, 1953, and The Municipal Act.

Under The Telephone Act, 1954, a telephone system must apply to the Authority for an Order of approval before a by-law, schedule of rates, or certain aspects of the physical or financial set-up of the system can legally be changed. The commercial division prepares the information on which the Authority bases its decision as to whether or not the action should be approved.

In the case of an application for an Order approving the sale of a system, or a part thereof, an investigation must be made to determine that a future merger or other desirable development will not be prejudiced. The studies of various merger possibilities require cost figures and revenue forecasts and the commercial and engineering divisions combine in providing ths informaton.

In the case of an application for an increase in rates, a study must be made both to determine that the rates are reasonable, from the standpoint of the telephone users, and that they are adequate for the needs of the system concerned. In some cases, proposed rates have not been approved in the first instance because they were too low, and the system has been shown that it must have a certain revenue in order to provide proper service and that a more realistic rate schedule should be established.

The commercial division also collects and checks the "Telephone Statistics" reporting form on which all systems make an annual return to the Dominion Bureau of Statistics and to this Authority. These returns are used extensively in analysing the problems of individual systems as well as in preparation of the annual publication 'Summary of Statistical Returns from Telephone Systems' which is widely used by the telephone systems themselves, equipment suppliers and others interested in the telephone industry.

SUMMARY OF STATISTICS

Complete returns for the calendar year 1959 are not available at the date of publication of this Report but detailed statistics on individual systems will be contained in the "Summary of Statistical Returns from Telephone Systems" which is mentioned above and will be published later in the year.

As at January 1, 1959 there were 333 independent telephone systems within the jurisdiction of Ontario operating approximately 175,000 telephones. During 1959, 27 independent systems, operating 4,500 telephones ceased to operate or were sold to other telephone systems. At January 1, 1960, therefore, there were 306 remaining independent systems reporting to this Authority. It is assumed that natural growth of the remaining systems will result in the total number of operated telephones remaining approximately the same despite the fact that most of these sales were made outside the independent field.

SALES

Sixteen systems gave up business during 1959 and their areas will now be served by The Bell Telephone Company of Canada. Usable plant has been retained and the remainder of their lines has been reconstructed to modern standards.

		No. of
Name	Address	Phones
Atwood Municipal Telephone System	Rainy River	32
Ben Allen Telephone Co. Ltd	Owen Sound	. 8
Bognor Telephone Co. Ltd	Owen Sound	20
Bracebridge and Northwood Telephone Co. Ltd	Bracebridge	. 17
Chatsworth Rural Telephone Co	Chatsworth	106
Conn Telephone Co. Ltd	Conn	183
Fifth Line Telephone Co. Ltd	Owen Sound	. 18
Glen Eden Telephone Co. Ltd	Owen Sound	14
Howland Municipal Telephone System	Sheguiandah	115
Loch End Ranch Private Telephone Line	Carleton Place	. 2
Minto Rural Telephone Co. Ltd	Harriston	262
Montague Centre Rural Telephone Co. Ltd	Smith's Falls	30
Roseville Rural Telephone Co. Ltd	Smith's Falls	22
South Diagonal Telephone Co. Ltd	Owen Sound	160
Sparrow Lake Private Telephone Line	Severn Bridge	10
Worthington Municipal Telephone System	Rainy River	49

Eleven additional systems were sold to larger telephone companies and their operations will be integrated with those of the new owners.

		No. of	
Name	Address	Phones	Sold To
Balaclava Telephone Co. Ltd	Owen Sound	30	Bell Telephone Co.
Conboy Telephone System	Maberley	47	Maberley Telephone Co. Ltd.
Foster Bros. Telephone Co. Ltd	Douglas	11	Davis Telephone Co. Ltd.
Gratton #7 Telephone Assoc	Eganville	21	Davis Telephone Co. Ltd.
Jackson Telephone Co. Ltd	Owen Sound	121	Bell Telephone Co.
Leeds and Grenville Independent			
Telephone Co. Ltd	North Augusta	982	Bell Telephone Co.
Lower Bonnechere Co. Ltd	Eganville	16	Davis Telephone Co. Ltd.
New Dundee Telephone Co. Ltd	New Dundee	271	Wilmot Municipal
			Telephone System
Norwesto Communications Ltd	Red Lake	1,581	Northern Telephone Ltd.
South Leeds and Pittsburgh			•
Telephone Co. Ltd	Gananoque	385	Bell Telephone Co.
Wilberforce Rural Telephone Co. Ltd.			
	•		•

Five Orders were issued during the year to approve change of ownership. The systems concerned will, however, continue to operate as separate entities.

(1) Docon Telephones Limited operating approximately 550 telephones from an exchange at Millbrook in Durham County was purchased by a new company which will be known as Durham Telephones Limited.

(2) The Falkirk Telephone System operating approximately 620 telephones at Kerwood, Ailsa Craig and Strathroy was purchased by a new limited company organized for the purpose which will be known as Falkirk Com-

munity Telephone Company Limited.

(3) Controlling interest in the Muskoka and Parry Sound Telephone Company Limited operating approximately 350 telephones at Sprucedale and Emsdale changed hands but the system will continue to operate under the same name.

- (4) A new company under the name of Northern Telephone Limited was incorporated for the purpose of merging the Northern Telephone Company Limited, Norwesto Communications Limited and Norwesto Enterprises Limited.
- (5) Ownership of the Rural Telephone Company of Kitley Limited was formally turned over to Mr. H. C. Lewis who has been managing the system for some years. The system, which operates approximately 300 telephones from an exchange at Toledo, will now be known as the Lewis Telephone System.

Two sales of a portion of a system were made during the year.

- (1) The Belmont Telephone Co-operative Association Limited turned over to the Byron Telephone Company Limited a number of telephones which they operated in the village of Glanworth in order to solve a duplication of service problem which had existed in that area for many years.
- (2) The London Township Municipal Telephone System sold to the Bell Telephone Company a small number of service station telephones operated from the Bell exchange at Lucan.

In addition to the above completed transactions, arrangements have been made for the sale or overbuild during 1960-1961 of an additional 32 systems operating approximately 3,700 telephones. Each case has been studied individually by the Authority and an Order has been issued approving the action.

Preliminary negotiations are underway for the sale or overbuild of 41 further systems although final Order of approval has not yet been issued by the Authority. In many cases, however, the Authority has been called upon to make a study of the situation and assist the system concerned to determine the best course of action. These 41 systems operate approximately 9,800 telephones and it is anticipated that the sale or overbuild of most them will be completed within the next five years.

ORGANIZATION OF SYSTEMS

The independent telephone systems in Ontario may be divided into four classes according to type of ownership. The 306 systems operating at the beginning of 1960 are organized as shown in the following table which also shows the number of telephones in each of the groups as of January 1, 1959.

Type of Ownership	Systems		Telephones	
7 Å	No.	%	No.	%
Systems operated as Public Utilities by Municipal Corporations	8	2.6	41,806	24.3
Municipal Systems	73	23.8	37,329	21.6
Systems owned by Incorporated Telephone Companies	197	64.4	86,605	50.5
Systems owned by Individuals or Partnerships	28	9.2	5,276	3.6
		-		
	306	100.0	171,016	100.0
	terre and			

SIZE OF SYSTEMS

The relative size of the independent systems is also of interest. Due to a trend of the times, many small systems are finding it economically impossible to continue to operate and are either selling out or vacating the area and making arrangements for another system to provide service. In the early days of the telephone industry, many groups of farmers, realizing the value of the telephone to them in conducting their business, organized telephone systems in their own communities, rather than wait until one of the larger companies could serve them. Good telephone service is today of even greater value and may be considered almost essential in the marketing of farm produce, yet it is from the rural areas that most complaints are received. Telephone service throughout rural Ontario is, however, continually improving. The sale of smaller systems to their larger neighbours generally results in more efficient operation and there is no doubt that most of the remaining independents, with the encouragement and assistance of the Ontario Telephone Authority, are making considerable progress in the modernization of their equipment and methods.

The following table indicates the size of systems operating in Ontario as at January 1st, and also shows the split between Connecting Companies and Service Station Systems. "Connecting Companies" are those which operate a complete

telephone plant including switchboards, while "Service Station Systems" provide only the telephone and line facilities which connect their subscribers with another company's switchboard and they must pay a switching charge for such connection.

No. of Telephones Operated	Connecting Companies		Service Station Systems		Total	
	No.	%	No.	%	$\mathcal{N}o$.	%
1-10	1	.6	14	10.5	15	4.9
11-25	1	.6	53	39.9	54	17.6
26-50	6	3.5	28	21.1	34	11.1
51-100	13	7.5	49	14.3	32	10.5
101-300	54	31.2	12	9.0	66	21.6
301-600	42	24.3	7	5.2	49	16.0
601-1000	27	15.5	-		27	8.8
1001-2000	19	11.0	-		19	6.2
2001-5000	7	4.1		-	7	2.3
5001-Over	3	1.7	_		3	1.0
	173	100.0	133	100.0	306	100.0

It will be noted from the above table that almost 45 per cent of the systems operate less than 100 stations each and more than 65 per cent have less than 300. Since the average system of less than 300 telephones cannot justify or afford a full-time employee to construct and maintain the plant, and still less, pay for management which is experienced in the telephone business, it is obvious that at least this 65 per cent of the total systems are operated not as a business but as something secondary to the principal occupations of the people concerned. Only 29 systems own more than 1,000 telephones which number might be considered the minimum for efficient operation.

Provincial Apiarist

A total of 44,843 colonies of bees were inspected by Ontario Apiary Inspectors during 1959, in 3,105 apiaries. American Foulbrood was found in 196 apiaries, or 6.3 per cent of those inspected. These diseased apiaries contained 814, or 1.8 per cent, infected colonies.

In 1959, 2,967 beekeepers registered 5,470 apriaries and 127,153 colonies.

During the year 60 disease samples were diagnosed. Approximately 217 permits were issued for selling and moving colonies and equipment. Thirty-one (31) permits were issued for moving 3,490 colonies for pollination of fruit, greenhouse and legume crops.

The 1959 Ontario honey crop of 11,125,000 pounds was about double the 1958 crop.

INSPECT	TON AND	REGISTR	ATION OF	COLONI	ES OF BEES	
	INSPECTION			REGISTRATION		
COUNTY	APIA	RIES	COLO	VIES	APIARIES	COLONIES
000000	Inspected		Inspected	Diseased		
Algoma		0	151	0	14	145
Brant		13	1,055	91	82	1,247
Bruce	19	0	208	0	158	4,356
Carleton	98	6	2,835	14	153	4,662
Cochrane	21	0	339	0	18	289
Dufferin	48	4	657	9	57	1,734
Dundas	12	0	212	0	58	1,404
Durham		7	864	7	103	2,033
Elgin	70	6	967	25	135	2,936
Essex	121	21	1,077	91	205	2,842
Frontenac		0	66	0	53	1,256
Glengarry	55	6	1,753	6	67	2,433
Grenville	. 16	0	238	0	54	1,230
Grey		1	742	2	229	7,914
Haldimand		0	487	0	147	3,546
Haliburton	. 7	0	31	0	8	57
Halton		nspection			110	3,118
Hastings	. 43	3	572	3	190	6,151
Huron	. 90	0	1,179	0	196	5,394
Kenora	. 4	0	19	0	5	16
Kent		1	526	1	120	1,519
Lambton		4	1,148	9	246	5,539
Lanark		3	615	11	102	3,526
Leeds		2	2,009	10	82	2,132
Lennox & Addington		nspection		=0	82	2,935
Lincoln		18	1,147	53	186	2,035 134
Manitoulin		0	107	0	15	
Middlesex		4	1,758	6	186	4,788 99
Muskoka		0	100	0	10 9	48
Nipissing		0	71	0	86	837
Norfolk		1	767	10 14	140	2,993
Northumberland	0.7	8	1,285	14 5	147	3,033
Ontario		1	2,207	_	92	1,947
Oxford		11	1,304	30	20	299
Parry Sound	. 12	0	113	0	20	233

INSPECTION AND REGISTRATION OF COLONIES OF BEES

	INSPECTION				REGISTRATION	
COUNTY	APIA		COLO		APIARIES	COLONIES
	Inspected	Diseased	Inspected	Diseased		
Patricia	No In	spection			1	2
Peel	26	2	373	3	128	2,983
Perth	42	0	968	0	104	2,847
Peterborough	34	0	466	0	86	1,744
Prescott	68	3	2,249	4	57	2,545
Prince Edward	41	3	880	8	59	1,341
Rainy River	19	0	444	0	34	862
Renfrew	57	7	722	12	116	3,367
Russell	49	2	576	12	44	879
Simcoe	175	3	3,016	5	287	7,263
Stormont	66	22	1,135	298	65	1,991
Sudbury	No In	spection			2	2
Thunder Bay	15	0	192	0	11	44
Temiskaming	14	0	661	0	44	1,797
Victoria	62	0	498	0	91	1,837
Waterloo	89	10	1,010	20	113	2,282
Welland	141	9	1,189	23	153	1,648
Wellington	136	4	2,038	9	134	3,156
Wentworth	88	6	880	7	149	2,249
York	116	5	937	16	227	3,687
TOTAL	3,105	196	44,843	814	5,470	127,153

Provincial Entomologist

The duties of the Provincial Entomologist in relation to the Plant Diseases Act were carried out in cooperation with the Farm Products Inspection Service of the Ontario Markets Branch and the Plant Protection Division of the Canada Department of Agriculture. All other work was conducted at the Department of Entomology and Zoology, Ontario Agricultural College, Guelph. Liaison in control recommendations was maintained with the Research Branch of the Canada Department of Agriculture.

The extension work in entomology included the preparation of many insect-control outlines and special assistance in relation to a few troublesome pests. In general the control of injurious pests was excellent. The apple crop, as in 1958, was particularly free from insect injury. A few pests that caused concern and more loss in production than normal were the cabbage looper, the Oriental fruit moth on peaches, the face fly on cattle, and the European red mite on fruit trees. The six-spotted leafhopper, the vector of aster yellows virus, continued in large numbers similar to the population in 1958.

Trapping for Japanese beetles was continued and areas where numbers of beetles were captured were treated with ten per cent dieldrin granular at 30 pounds per acre as follows: St. Catherines 44 acres, Fort Erie 6 acres, Hamilton 7½ acres, Port Burwell 27½ acres, and Windsor 15 acres. This work was in cooperation with the Canada Department of Agriculture. Japanese beetles have not caused crop damage in any area, thus these control measures were designed to prevent this pest from increasing.

Regulatory Duties

The Provincial Entomologist was in charge of certain "Plant Diseases" under the Plant Diseases Act.

Nursery Inspection

A total of 360 nurseries were inspected in 1959 under the Plant Disesases Act. San Jose scale was found on 370, fire blight on 4, and black knot on 13, out of 3,338,401 plants inspected. The infested plants were destroyed.

Lecanium scale increased in importance, particularly on Taxus and Thuja. Juniper scale and juniper webworm were often reported during inspection.

Apple Maggot

The number of apple orchards inspected concerning apple maggot was larger than normal. Two hundred and fifty three (253) apple orchards were inspected in 1959 concerning qualifications for shipment of apples to countries requiring a certificate, that is countries such as the United Kingdom and in Europe compared to 144 in 1958. Unfortunately apple maggot infestations were heavier with the apples in many orchards not qualifying for an export certificate. As a result it was not possible to fill all export orders.



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(PROVINCE OF) ONTARIO, Agriculture Department al

Report of the minister of agriculture

FOR THE YEAR ENDING MARCH 31, 1962





CARPNAL

REPORT OF THE MINISTER OF AGRICULTURE



Ontario Department of Agriculture

REPORT

OF THE

MINISTER OF AGRICULTURE

PROVINCE OF ONTARIO

FOR THE YEAR ENDING MARCH 31, 1962



Printed by Order of The Legislative Assembly of Ontario (Sessional No. 21 — 1962)

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DEPARTMENT OF AGRICULTURE PROVINCE OF ONTARIO

TO THE HONOURABLE LT.-COL. JOHN KEILLER MACKAY, D.S.O.

Lieutenant-Governor of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the honour to submit the Report of the Department of Agriculture for the year ending March 31, 1962.

I have the honour to be, sir,

Your obedient servant,

WM. A. STEWART,

Minister of Agriculture.

Toronto, March 31, 1962.



EXPERIMENTAL STATIONS
of the
DEPARTMENT OF AGRICULTURE

- · Educational
- · Research
- Demonstration



Ontario Agricultural College

COURSES AND ATTENDANCE

In the Degree Course many changes were made by various departments, chiefly because of the new curriculum for students who enrolled in September 1961. In the Graduate School new courses were introduced by the Departments of Agricultural Economics and Engineering Science. Special summer courses at the Grade XIII level in mathematics and physics and in chemistry were offered to those students of the Associate Diploma Courses of O.A.C., Kemptville Agricultural School, and Western Ontario Agricultural School who wished to meet the admission requirements for the Degree Course at the College. A summer course in biochemistry was offered to high school teachers who wished to increase their qualifications as Science Specialists.

In the undergraduate courses in Agriculture, 865 students were enrolled; in the Associate Diploma Course there were 174; in the course leading to the degree of Bachelor of Science in Agriculture there were 683, and in addition there were eight special students. Students proceeding to the degree of Master of Science in Agriculture in the Graduate School numbered 99; in addition there were 11 special students. The total attendance for the year at Macdonald Institute was 270; of these, 40 were registered in the one-year Diploma Course and 230 in the course leading to the degree of Bachelor of Household Science. The attendance in Special and Short Courses was 2,903; the grand total in all courses was 4,145.

ACADEMIC FUNCTIONS

BACCALAUREATE SERVICE. The annual Baccalaureate Service for the 1961 graduating classes of the Ontario Agricultural College, the Ontario Veterinary College, and Macdonald Institute was held in War Memorial Hall on Sunday, March 26, 1961. The Reverend C. H. Dickinson, B.A., B.D., D.D., Book Steward of the United Church of Canada, and father of Trevor Dickinson, 1961 President of the Union Student Council, delivered an inspiring address to an audience of more than 500, including graduating students, parents, faculty, and other students, on the subject "Maintaining our Ideals".

On Sunday, March 25, 1962, the 1962 graduating classes of the three Colleges, their parents and friends, and members of the faculty attended the Baccalaureate Service in War Memorial Hall. The Reverend J. Scott Leith, B.A., B.B., D.D., Minister of Humbercrest United Church in Toronto, and father of Miriam Leith, a graduating student of Macdonald Institute, delivered the address on the theme "Look Backwards to Go Forward".

GRADUATION FOR ASSOCIATE AND DIPLOMA COURSES. Graduation exercises for the Diploma Courses at the Ontario Agricultural College and Macdonald Institute were held on Wednesday, May 17, 1961. The students were addressed by Mr. Lawrence M. Kerr of Chatham, Ontario. Diplomas were awarded to 56 graduates of the O.A.C. two-year Associate Diploma Course, and to 36 graduates of the Macdonald Institute one-year Diploma Course.

CONVOCATION FOR DEGREE STUDENTS IN AGRICULTURE AND HOUSEHOLD SCIENCE. The degree of Bachelor of Science in Agriculture was conferred on 107 students, and the degree of Bachelor of Household Science was conferred on 33 students at the annual convocation exercises in War Memorial Hall on Friday, May 19, 1961. The degrees were conferred by F.C.A. Jeanneret, B.A., D. ès L., O.A., LL.D., Chancellor of the University of Toronto. The convocation address was delivered by Vincent W. Bladen, M.A., F.R.S.C., Dean of the Faculty of Arts and Science, University of Toronto.

EVENTS OF THE COLLEGE YEAR

THE CANADIAN NUTRITION SOCIETY. The fourth annual meeting of the Nutrition Society of Canada was held at the Ontario Agricultural College on May 30-31. Some 70 scientists attended from all parts of Canada to hear addresses by outstanding personalities in the field of nutrition.

CANADIAN FEDERATION OF BIOLOGICAL SOCIETIES. More than 300 scientists met at the Ontario Agricultural College on June 1-3, for the fourth annual meeting of the Canadian Federation of Biological Societies, including the Canadian Physiological Society, the Pharmacological Society of Canada, the Canadian Association of Anatomists, and the Canadian Biochemical Society. The Canadian Physiological Society celebrated its 25th Anniversary on this occasion. One hundred and sixty-five scientific papers were delivered by outstanding biologists in Canada and the United States.

FIRST CONTROLLED ATMOSPHERE STORAGE OPERATORS' CONFERENCE. On June 13 a large gathering of fruit and vegetable growers and dealers from all parts of Ontario met at the new Horticultural Storage Laboratory for the first Controlled Atmosphere Storage Operators' Conference to be held in Ontario. A feature was an address by Dr. R. M. Smock of Cornell University.

ANNUAL ALUMNI REUNION. On the weekend of June 16-18 approximately 1,000 graduates of the Ontario Agricultural College and Macdonald Institute returned to their Alma Mater for the Annual Alumni Reunion. A feature of the reunion was the official opening of the new Biology Building by the Honourable W. A. Goodfellow, Minister of Agriculture, and the Honourable Ray Connell, Minister of Public Works.

NEW BIOLOGY BUILDING AND THE HORTICULTURAL STORAGE LABORATORY On Saturday, June 17, 1961, the new Biology Building and the Horticultural Storage Laboratory were officially opened by the Honourable W. A. Goodfellow, Minister of Agriculture, and the Honourable Ray Connell, Minister of Public Works, in the presence of a large number of faculty, alumni, and visiting guests. Also taking part in the ceremony were Dr. J. D. MacLachlan, President, O.A.C., the Reverend W. A. Young, College Chaplain, Professor F. H. Montgomery, Head of the Department of Botany, and Dr. W. E. Heming, Head of the Department of Entomology and Zoology.

SCIENCE SEMINAR. On October 19, 20 and 21 the College entertained at a Science Seminar 77 outstanding Grade XII students from the high schools of Ontario; the students had been selected on the basis of a Province-wide examination. The program included lectures and demonstrations by the College faculty.

PROFESSOR CAVERS HONOURED. Professor J. R. Cavers, Head of the Department of Poultry Science, was one of the five scientists on the North American Continent to be made a Fellow of the Poultry Science Association at their annual meeting at Pennsylvania State College in August.

J. J. MORRISON MEMORIAL LECTURE. Dr. Eugene Forsey, Director of Research for the Canadian Labour Congress, was the J. J. Morrison Lecturer on Tuesday, October 31, 1961, in War Memorial Hall. He spoke on the subject "Economic Growth" to a large gathering of representatives of farm organizations, students, and faculty.

REMEMBRANCE DAY SERVICE. The annual Remembrance Day Service was held in War Memorial Hall on Sunday, November 12, at 11:00 a.m., with the College Chaplain, the Reverend W. A. Young, officiating. There was a large attendance of students and faculty, including the members of the College units of the Navy, Army, and Air Force, who paraded in uniform.

ONTARIO FARM SAFETY CONFERENCE. Some 250 delegates from 54 counties in Ontario met in the Physical Education Building for the Ontario Farm Safety Conference, February 5, 6, and 7, to discuss the theme "Farm Safety Leadership in 1962".

DEATH OF PROFESSOR N. J. THOMAS. A veteran of 35 years' service at the Ontario Agricultural College, Professor Norman J. Thomas died on January 31, 1962. Following his graduation in 1923, he was appointed to the staff of the Department of Chemistry. In 1945 he transferred to the newly formed Department of Soils. He was widely known for his work on grassland improvement and for his practical approach to the problems of the farmer. He retired in 1961.

DEATH OF HARRY BAILEY. Harry Bailey, for more than 20 years curator of the College greenhouses, died on January 18, 1962. A graduate of the class of 1936, he joined the Department of Horticulture in 1937. In 1951 he was appointed to the College faculty. Until recently he was in charge of outside plantings on the College grounds. He was highly respected for his knowledge of greenhouse operation and the growing of house plants. His publication, "House and Gift Plants", has received wide distribution.

DISTINGUISHED VISITORS. During the year the College was privileged to welcome a number of distinguished visitors from many parts of the world, representing the fields of science, agriculture, education, and government. Included among the outstanding personalities who visited the College were: Mr. A. A. Aroutunian, U.S.S.R. Ambassador to Canada; Mr. J. A. van Rensburg, Director of Soil Conservation, Union of South Africa; Professor Kelly, Trinity College, Dublin, Ireland; Dr. Bensike, Chief, Grain and Feeds Section, Marketing Service, U.S.D.A.; Dr. Artturi Lehtinen, Finnish Ambassador to Canada; Dr. Robert Woodson, Curator, Missouri Botanical Gardens; Mr. Paterno R. Santos, Philippines; Mr. E. C. Pelham, Principal, Hertfordshire Institute of Agriculture, England; Dean A. H. Willis, University of New South Wales, Australia; Professor J. Moustgaard, Royal Veterinary and Agricultural College, Denmark; Dr. E. Akerberg, Plant Breeding Institute, Svalof, Sweden; Dr. D. Golden, Northern Ireland; Mr. G. Kaptan, Poland; Dr. W. H. Nicholls, Vanderbilt University, Nashville, Tenn.; Lord Malmsbury, England; Mr. A. G. David, Department of Agriculture, Rhodesia; Mr. N. Sato, Japan; the Honourable Waldo Monteith, Federal Minister of Health and Welfare; Dr. V. Ignatieff, Agricultural Director, FAO; Dr. Brock Chisholm; Dr. F. B. Hutt, Cornell University; and Dr. H. B. Parry, Oxford University.

GROUPS AND CONFERENCES. During the year the College was host to some 57,000 people representing every phase of the agricultural industry in the Province, throughout Canada, and in many parts of the world.

Among the visitors were large numbers of young people, both rural and urban, who were represented in the following groups: Provincial Girls 4-H Homemaking Conference, 4-H Achievement Week, 4-H Inter-Club Judging Competition, Junior Farmers Conference, Junior Farmers Field Day and Bonspiel, Junior Farmers

Drama Festival. More than 1,000 high school students were the guests of the college students at the College Royal. Forty-five high schools were represented at the various CWOSSA field days and sports finals held in the Physical Education Building and on the playing fields. At various times young farmers from Great Britain, France, the Netherlands, Australia, and the United States were welcomed to the College. During the year more than 5,000 primary and secondary school students and their teachers visited the College for educational tours. A Science Seminar was held in October, when 77 selected Grade XII students were entertained by the College. In January, a delegation of Cubans spent several days at the College studying the organization with a view to setting up a Cuban agricultural college.

To replace the traditional Farm and Home Week various county groups, such as Soil and Crop Improvement Associations, were invited to visit the College on a day of their own choice during the summer. Several counties, including Simcoe, Huron, and Waterloo, accepted the invitation. Livestock groups meeting at the College included the Ontario Sheep Breeders, the Ontario Swine Breeders, the Ontario Shorthorn Club, the Ontario Yorkshire Club, the Canadian Goat Society, a cattle-diseases short course, and the Channel Islands Milk Producers. Groups of farmers from Russia, Australia, Japan, New York, Quebec, Nova Scotia, Prince Edward Island, Manitoba, Saskatchewan, and Alberta were visitors during the year.

Poultry groups and conferences included the annual Poultry Industry School, the Ontario Broiler Growers Association, and the Ontario Poultry Federation. Dairy groups visiting the College included the Ontario Soft Serve Operators Conference, personnel of the Ontario Dairy Branch, the Dairy Herd Improvement Supervisors, the Western Ontario Cheesemakers Conference, Milk Sanitarians Conference, a school for the study of a foreign-type cheese, and an ice cream short course.

Groups visiting the Department of Field Husbandry included the Elite Seed Growers, the Canadian Seed Trade Association, and the Ontario Potato Growers Conference. In the field of Soils and Conservation, visiting groups included the Ontario Branch of the Soil Conservation Council of America, the Grand Valley Conservation Authority, and the National Soil Survey and Soil Fertility Conference. Horticultural groups included the School for Basic Floral Design, the Dwarf Fruit Tree Association, the Fieldmen's Conference of the Ontario Food Processors Association, the Royal Canadian Golf Association Turf Conference (the largest on record), the Ontario Parks Association, the Ontario Fruit Research Committee, and several horticultural societies.

Other groups holding meetings or conferences at the College included the Boy Scouts of Canada, the Pest Control Operators, the Farm Drainage Conference, the Regional School for Bankers, the Federated Women's Institutes of Ontario, the School for Rural Clergymen, the Ontario Beekeepers Association, the Feed Mill Management Conference, the Canadian Association of Textile Colorists, and the Extension Branch of the Ontario Department of Agriculture.

STUDENT ACTIVITIES

"Today's Research - Tomorrow's Methods" was the theme of the 38th annual College Royal. On Wednesday, March 7, a large crowd of visitors including parents, friends of the Colleges, and about 1,000 secondary school students saw exhibits in the Physical Education Building, Macdonald Institute, and the Ontario Veterinary College. The weather was pleasant and the visitors could either walk to these buildings or use the bus service. Earlier activities included the College Royal Ball, the English Night contests in music and in radio and public speaking. and the Square Dance Competition. The student-produced Curtain Call Revue. "The Unteachables", filled War Memorial Hall on Wednesday, Thursday and Friday evenings. Formed in March 1961, the Arts Society carried out a full and varied program. An "Arts Festival" in October included the Canadian Players' presentation of Christopher Fry's The Lady's Not For Burning, a Kitchener-Waterloo Symphony Orchestra concert, the student-produced Robertson Davies' one-act play ()verlaid, two art displays, and an invitational debate. Other studentproduced plays included Herman Gressicker's Royal Gambit and Tennessee Williams' Suddenly Last Summer. There were monthly art exhibitions in Massey Hall and monthly presentations of foreign films, including Wild Strawberries and The Seventh Seal. In February 1962, the Stratford Actors' Tour presented a two-part, illustrated lecture on Shakespeare's Comedy; their two-day visit to the campus was part of a tour of several Ontario and Quebec colleges and universities. Other activities of the Arts Society included Inter-University Debating League and intramural debating, Sunday evening concerts, performances by the Band and majorettes and by the Choral Club, which this year was host to the Invervarsity Choral Festival. "Langollen" was the theme for Conversat '62; it was held at the Physical Education Building, the setting being a Welsh castle of the 13th century. The Student Christian Movement, the (Intarion, the Triple Link Society, National Federation of Canadian University Students, the Libranni, and the Men's Athletic Association carried out their regular program of activities. Union Council supervised the many student activities, assumed juridiscition of all society fees, clarified and re-drafted discipline procedures, and began a change of its own structure in order to include presidents of major societies and representatives from the Students' Administrative Councils of the three schools on the campus.

TRAINING FOR THE ARMED SERVICES

Officer cadets were trained for the three Armed Services during the past year. Although the number of students taking part in these schemes was small, the calibre of the participants, as a result of exacting selection, was high. The program was divided in two parts, the first being given at the College during the academic year, the second in training ships and establishments in Canada and in other NATO countries during the students' vacation period. The Armed Services had a total of 35 cadets enrolled, 14 in the University Naval Training Division, 14 in the Canadian Officers' Training Corps, and seven in the R.C.A.F. University Reserve Training Plan.

RESEARCH AND DEVELOPMENTAL ACTIVITIES

The following report records major accomplishments in research and allied developmental activities during the 1961-62 fiscal year.*

AGROMETEOROLOGY

The tabulation and analysis of weather records were continued, and abstracts of weather data were supplied to research workers.

Frost penetrated to depths of more than one metre in undisturbed soils in February. During April and May the early storm tracks were further south than usual and brought cool, wet weather. Even in late May frosts were common. In this region June was characterized by the passage of many low pressure areas, which brought cloudy, wet weather. The precipitation at Guelph was slightly below normal. Through July and August there were cloudy skies, frequent showers and thunderstorms, high values for relative humidity, and consistently warm day-time and nighttime temperatures, but no heat waves. Soil moisture was abundant. Lodging of cereal crops was severe in many fields. Low rainfall and above normal temperatures in September permitted the completion of a long, difficult harvest. Warm weather persisted until the middle of November. Crop yields, in general, were above average.

A comparison of five different types of rain gauges, using their respective rainfall records, showed no significant differences.

MICROMETEOROLOGY. Profiles of wind, temperature, and vapour pressure from the soil surface to five metres were obtained in a corn field. In the day-time there was a sharp break in the wind profile at the top of the crop, in contrast to a gradual change in temperature and vapour pressure profiles. Thus, momentum exchange from the atmosphere to the surface occurred mainly at one height, whereas exchange of heat and vapour was distributed over a height interval. Successfully developed instrumentation included a mast for wind profile measurements and a vertical track on which a ventilated thermocouple psychrometer was moved up and down through five metres each 12 minutes.

Floating lysimeter records showed nearly identical hourly rates of evapotranspiration for corn and blue grass in July and August, when the soil moisture in both areas was high. More accurate measurements of the daily evapotranspiration, by means of the Thornthwaite type evaporimeters, was made possible by the development of a method to estimate the storage of water in the evaporimeters after rainfall. Of 30.3 inches of precipitation for the calendar year, there was 3.8 inches of percolation through a Guelph loam soil.

Detailed energy-balance and soil-temperature data for various crop surfaces were recorded over 1,000 hours throughout the growing season.

CLIMATOLOGY. Climatological records from 11 stations over the past 40 years have been placed on "punch cards" in a form suitable for analysis by an electronic computer.

*The Ontario Agricultural College gratefully acknowledges the valuable co-operation of individuals and groups of federal, other provincial, university, industrial, and other research organizations.

CROP ECOLOGY. Unventilated radiation shields for measurement of temperature with thermocouples placed in forage crops were devised. Instrumentation has been completed for the purpose of measuring soil temperatures and air temperatures above and within the crop, as related to weekly dry matter production of orchard grass.

In a field experiment it was found that or chard grass harvested when more than 95 per cent of the incident light was intercepted by the crop gave a yield of 2,550 pounds more of dry matter than that harvested when only 80 per cent of the incident light was intercepted.

SOIL AND WATER

SOIL SURVEYS AND GENESIS. Soil surveys were completed in Lanark County (125,000 acres) and continued in Leeds County (75,000 acres).

Detailed soil maps were prepared for part of the Animal Research Institute experimental area (640 acres) at Ottawa and for the Illustration Station (50 acres) at Williamstown.

A special reconnaissance soil survey was carried out in the Fort William area for the Canada Department of Agriculture.

Soil survey information was provided for the Farm Economics Branch and for the Department of Lands and Forests.

Laboratory analyses of several profiles showed a concentration of clay immediately below the surface layer of some poorly drained soils. The total phosphorus content was found to be greater in poorly drained soils than in well-drained soils.

Differential thermal analysis, X-ray, and an electron microscope study of Gananoque clay soils showed interlaying of illite and expanding layer silicates, the expanding types decreasing in amount from the A to the C horizon.

SOIL FERTILITY. Minor revisions in the fertilizer requirement tables for nitrogen, phosphorus, and potassium were made and distributed to Department of Agriculture personnel making fertilizer recommendations.

Field and greenhouse experiments with oats showed that fertilizer phosphorus uptake and yield of crop were greater from fertilizer placed with the seed than from fertilizer placed to the side of the seed. Twice as much fertilizer was required in broadcast application to give a yield equal to that from fertilizer placed with the seed.

Sixteen regional fertility trials on corn, oats, and wheat provided data for further refinement of soil test calibration. On some plots, yields of more than 150 bushels of corn per acre were recorded. Average increases of 15 bushels of corn were obtained from 60 pounds of nitrogen (N) per acre, increases of 9 to 15 bushels from 80 pounds of phosphorus pentoxide (P_2O_5) per acre, and increases of 8 to 28 bushels from 80 pounds of potassium oxide (K_2O) per acre. Increases of 5 to 10 bushels of oats were obtained from 20 pounds N per acre and increases of 5 to 8 bushels from 40 pounds P_2O_5 per acre; there was no response to K_2O . Increases of 7 to 22 bushels of wheat were obtained from 50 pounds P_2O_5 per acre.

At three locations, applications of nitrogen, phosphorus, and potassium fertilizer as a top-dressing on grass-legume stands gave marked yield response on loam soils to potassium (up to one ton increase for 60 pounds K_2O per acre), but

not on clay soils. Application of 60 pounds N per acre after first cut gave increased second cut yields of 0.7, 0.6, and 0.3, respectively, of a ton of hay (15 per cent moisture basis) at the three locations.

Field evaluation of fertilizer recommendations based on soil tests was conducted in 10 counties - on 21 locations with oats, 7 with winter wheat, 3 with corn, 5 with white beans, and 1 each with soybeans and turnips. Except for soybeans, all crops on the average gave profitable returns from fertilizer applied according to soil test. With oats, fertilizer applied according to soil test over a three-year period gave returns of \$1.45 per dollar invested in fertilizer on sandy loam and loam soils.

In field trials on six farms with potatoes following oats or grass sod, 75 pounds N per acre gave highest net returns. Following alfalfa sod or manure treatment, 50 pounds N per acre, and following potatoes, 100 pounds N per acre gave highest net returns. Nitrogen in excess of these rates gave lower net returns, but did not reduce potato quality.

With sugar beets in the field, treatments in which all or part of the fertilizer was banded below the seed gave a higher phosphorus content in the leaves than did broadcast or plow-down applications at an early sampling date (June 1), but no significant difference at a later sampling date (July 27). Yield and sugar content of sugar beets were not influenced by fertilizer placement.

In a field experiment, it was found that yield of orchard grass was not affected by morphological development at time of cutting. Yields of brome and timothy, however, were increased by 1,200 and 2,600 pounds of dry matter per acre, respectively, when first and third harvests were taken prior to stem elongation and when second harvest was taken after satisfactory auxillary bud development, as compared to harvests taken immediately after stem elongation. The longer the time between harvests or the greater the light interception prior to harvest, the greater the yield.

On Haldimand clay, broadcast application of part of the nitrogen fertilizer in the previous fall gave an increase in corn yield equal to that when all of the nitrogen was applied at planting time.

At the Muck Research Station, carrots gave a response to potassium fertilizer. Response was correlated with soil test.

In a crop sequence experiment at Guelph, with no nitrogen applied, all-grass forage yield was only 65 per cent of the yield of legume-grass forage. With nitrogen fertilizer at 160 pounds per acre, yields were similar.

In laboratory and greenhouse studies with wheat and red clover, the PA2 phosphorus test was found to be less accurate on strongly acid soils and on high lime soils. The amount of phosphorus extracted depended on pH, which varied among soils due to variation in lime content. A resin-extraction method offered promise in overcoming this difficulty. In neutral to acid soils, added phosphorus was retained in soil as aluminum phosphate or, in one instance, as iron phosphate. In highly calcareous soils most of the phosphorus was retained as calcium phosphate. It was apparent that the organic phosphorus was also important for crop growth.

Treatment of clay fractions of Guelph and Haldimand soils with concentrated phosphorus solutions resulted in an increase in the percentage of illite and a decrease in the percentage of vermiculite and interstratified montmorillonite. Concentrated phosphorus solutions apparently removed amorphous sesquioxides and caused breakdown of expanding-lattice clay minerals in the soil. In another study of the clay fraction of Guelph loam soil, halloysite was identified using an electron microscope, and X-ray analyses indicated the presence of interstratified

montmorillonite-illite and/or vermiculite and chloride.

In laboratory study, it was found that 80 per cent of the phosphorus moved out of the fertilizer pellet within two days after placement in the soil. Sodium nitrate placed with the pellet reduced the movement of phosphorus away from the pellet, but ammonium sulphate had no effect. In another experiment, it was found that nitrogen placed with phosphorus fertilizer greatly increased the development of branch roots in the fertilized zone, but had no influence on elongation of main roots.

In growth chamber experiments it was found that absorption of phosphorus by plants decreased as the soil moisture content was varied from field capacity to near wilting point.

A resin-equilibration method for measuring moderately available non-exchangeable potassium was developed. The amount of non-exchangeable potassium released was dependent on temperature, moisture, and pH of the equilibration mixture. The use of the exchangeable and moderately available potassium values in a multiple quadratic regression permitted more accurate prediction of crop yield than did the exchangeable potassium value alone.

Isotopic exchange studies indicated that there was a single equilibrium form of manganese oxide in soil. Several other forms of manganese, extractable with zinc sulphate, were in equilibrium with manganese in solution, but exchange with these forms was much slower than with the oxide forms.

It was determined that the dichloropropene products Vorlex and Telone maintained nitrogen in Delhi tobacco and Bradford muck soils in the ammonium-nitrogen form by specific inhibition of microbial nitrification, which might persist for several months, and it would appear that this same inhibition of nitrification might prevent losses of nitrogen by leaching and denitrification when in the nitrate form.

Comparative studies of the actinomycete population of acid forest podzol and neutral mull forest soils showed that, among 224 isolates, the majority belonged to the genus *Streptomyces*. Based on pH tolerance, it was determined that the isolated *Streptomyces* spp. could be classified into two main groups, each requiring conditions more acid than actinomycetes found in agricultural soils.

After an initial lay phase of 2-3 hours, maximum populations of soil actinophages active against *Streptomyces scabies* have been obtained in 16-24 hours. Neutralization of sections of the wild phage population, by using specific antisera against the two most common serological groups of actinophage found in soil, permitted the demonstration and isolation of phages not previously observed.

One hundred and seventy-six species of thermophilic actinomycetes were isolated from manure, agricultural soils, and composts. Examination of these species revealed that the majority of them belonged to the genus *Thermoactinomyces*, and that they were capable of decomposing cellulose, hemicellulose, and various proteins at temperatures in excess of 50° C.

SOIL PHYSICS. On a 7 per cent slope at Guelph, 22 tons of soil per acre were lost from a plot that was producing corn every year, the corn being planted up and down the slope. Five storms in July and August accounted for 89 per cent of the soil loss. A plot of corn, after two years of hay, lost less than 2 tons of soil per acre.

Crop rotation studies in Haldimand clay showed that a grass-legume crop in the sequence increased the percentage of water-stable aggregates in the soil, but did not increase the soil organic matter content. Farmyard manure application did increase organic matter content.

In field studies on clay soil, it was found that corn and alfalfa extracted sim-

ilar amounts of soil moisture down to a depth of 24 inches. Below this depth, alfalfa extracted more moisture than corn.

Evapotranspiration estimates were made from rainfall records and soil moisture measurements with neutron probes at 50 sites in 5 crops and on 5 soil types. The effect of the soil moisture content on the volume of influence for the neutron surface moisture probe was determined. At 5.0 per cent moisture, by volume, the vertical dimension of the volume of influence was 34 centimetres, and the horizontal dimension was 53 centimetres. At 43.1 per cent moisture, by volume, the vertical dimension was 14 centimetres, and the horizontal dimension was 42 centimetres. The calibrations of both the depth and surface probes in muck soil were found to be essentially the same as the calibrations in mineral soils.

Eleven soil profiles were inspected in order to relate the morphology of the profile to values obtained by the neutron moisture probe. The location and the thickness of the B horizon explained most of the anomalous results.

HYDROLOGY. A new coefficient for evaluating sprinkler distribution patterns was developed. It was found that this index was consistently a more descriptive and sensitive index of sprinkler performance than the widely used Christiansen's uniformity coefficient.

Eleven separate tile drain outflow periods were recorded between April 13 and November 11,1961, at a site near Merlin. As a result of a steady 4-inch rainfall, one large flow occurred, which flooded the test site and exceeded the capacity of the flow metres. However, the records obtained showed that the peak flow exceeded a rate of 1.5 inches per 24 hours for a minimum period of 6 hours' duration.

Hydrologic studies of a swampareanear Guelphrevealed that stream flow out of the swamp was supplied by a large ground-water body. In the daytime, during the growing season, outflow from the area was reduced by 6 to 8 per cent; from this particular type of swamp, a part of the potential water supply was lost by evapotranspiration.

Field evaluation of geo-electrical equipment for ground water prospecting was continued. Using this equipment, a survey for a buried granular deposit in the Bronte area was made, and the area extent of the deposit was determined.

A three-year study of irrigation of potatoes on muck soils indicated that irrigation improved yield and quality, the gain in both being dependent on the seasonal conditions. Increases of as much as 2 per cent dry matter and 140 bushels per acre in yield were obtained through irrigation. This study suggests a re-appraisal of the commonly held concept that high yields and dry matter in potatoes are inversely correlated.

TILLAGE OPERATIONS. A hay crop was grown on Haldimand clay on plots which previously had been given vertical mulch treatment (straw placed in narrow channels 30 inches deep) and horizontal mulch treatment (straw worked into the top 4 inches of soil). There was no appreciable difference in yield of hay on the vertically mulched, on the horizontally mulched, and on the check plots with no mulch.

CROPS

Field crop recommendations for different climatic regions of Ontario were revised and published, on the basis of results of regional trials.

FORAGE CROPS. Evaluation of several forage varieties was completed, and a variety of orchard grass, Tardus II, was added to the recommended list. This variety is similar in type to common orchard grass, but matures 5 days later and is somewhat leafier. Dollard red clover, a variety which matures 7 days later than Canadian doublecut and has greater resistance to northern anthracnose and greater persistence into the second year, was included on the recommended list.

Birdsfoot trefoil was found useful for additional regions including Northern Ontario, and so was recommended for farm use on a wider scale. Improved stands of trefoil under an oat companion crop were obtained when oats were seeded in 14-inch drills and the crop sprayed with 2,4-DB, when the trefoil was in the first true leaf stage.

The process of pod and seed development in birdsfoot trefoil was divided into three stages: pod elongation, seed development, and seed maturation. The last stage was the significant one in the timing of seed harvest. As pods reached a light green to green-white colour, seeds were found to be physiologically mature and pods did not dehisce. Pods dehisced severely when they reached a golden brown colour. Seed, developed in the three lowest umbels on the plant, accounted for 92 per cent of the potential yield. The optimum time for seed harvest is when 70 to 80 per cent of the pods in the lower three umbels are in the light green to green-white colour stage.

Spring samplings were made on areas of Vernal alfalfa that had been subjected to either long or short photoperiods the previous fall. The field results were essentially the same as in 1960-61, namely, that crowns of plants, under the long fall days, did not become organized for winter and therefore suffered severely from winter killing. Unlike the previous year's results, the long day roots were lower in carbohydrates in the spring of 1961. There was an indication that cutting practices of the previous summer might affect fall development and hence winter survival.

Chemical analyses were made on a large number of samples of forage crops in the strain testing program. In a study on the growth curves of hay the protein content was determined in 168 samples of five varieties of orchard grass and 764 samples of alfalfa, bromegrass, orchard grass, and timothy. The protein and crude fibre contents of 72 samples of 12 strains of bromegrass and 218 samples of 12 varieties of timothy were determined.

A technique was developed for harvesting short rows of forage in a breeding program. The essential feature was the design of a set of holder-lifter tongs to hold the forage while it was cut.

A new type of seed separator was designed to separate shrivelled birdsfoot trefoil seed from more viable seed. This machine was used in the viability selection program.

OTHER FIELD CROPS. Two diploid barley varieties and their corresponding tetraploids were subjected to different dosages of X-rays and ethylene imine treatments. As measured by the per cent emergence and survival, the two varieties differed in their tolerance to mutagens at the diploid level, as well as at the tetraploid level. At both levels of ploidy the variety O.A.C. 21, which had relatively high fertility as a tetraploid, was more tolerant to injury from the two mutagens than the variety York, which was low in fertility at the tetraploid level.

The evaluation of several strains of winter barley was completed, and the strain G.H. 12 was released under the name Dover. This variety was superior to Hudson in straw strength and yield. Also, it was slightly more winter hardy. It had similar malting quality to Kenate and could be used for malting in blends with acceptable spring barley varieties.

The federal-provincial evaluation program for corn hybrids was expanded, and the detailed data published. Evaluation of 48 hybrids produced by commercial corn companies and Canadian institutions was finalized. Of this number, 31 proved satisfactory for licensing for sale in Canada, and 18 were sufficiently superior to be added to the Ontario recommended list.

A five-year study of plow planting corn on six different soil types in Western Ontario was completed. The results showed that minimum tillage would not reduce corn yields under proper conditions, and the best conditions for plow planting were established.

Assessment of field pea varieties resulted in the inclusion of Creamette on the recommended list.

A preliminary model of a plot harvester was given field trials, and the design of the model was finalized.

TREE AND SMALL FRUITS. Naphthaleneacetic acid (NAA) and naphthaleneacetamide (Amide) were applied as chemical thinning agents in comparative tests on McIntosh, Northern Spy, Early McIntosh, and Golden Delicious apples, primarily to compare early Amide application (at petal fall) with late Amide application (10 days after petal fall), and with NAA application (10 days after petal fall). There were no apparent significant differences in the results obtained with the early and late applications of Amide. Thinning results were somewhat better with NAA than those with Amide, but only the Northern Spy plots receiving both the early application of 75 p.p.m. of Amide and the late application of 15 p.p.m. of NAA were thinned adequately.

Northern Spy applies treated with 2,4,5-trichlorophenoxypropionic acid as a pre-harvest spray at 30 p.p.m. were also subjected to gamma radiations of 0, 75,000, 85,000 and 95,000 rads. Withincreased doses of gamma radiation, firmness of flesh during storage decreased. Apples were able to withstand the 95,000 rads without apparent damage. No incidence of scald or core flush was observed. Germination of seed from irradiated apples was reduced to a maximum effect at 85,000 rads, but it returned to a relatively high level at 95,000 rads. All germinated seeds from irradiated fruit showed small, undeveloped radicles with brown tips, and were unable to develop normally. Seedlings from non-irradiated apples were normal in all respects.

Seed viability tests with 2,3,5-triphenyltetrazolium chloride were initiated to observe the relationship between the degree of staining and of viability in apple seeds. Tests were carried out with excised embryos of seeds of different apple varieties. The germinative capacity was determined by a rapid viability test. The tetrazolium chloride test showed a viability percentage of 92.5, as compared to a percentage of 94 with the rapid viability test. Thus, it is possible that the viability of apple seeds can be determined by the use of 2,3,5-triphenyltetrazolium chloride and that there is a significant correlation between the two methods.

A study of Amelanchier and Sorbui as rootstock for pear trees was undertaken to obtain a preliminary indication of the vigour and general combining ability of these rootstocks. Scions of 24 commercial pear varieties were grafted to Amelanchier alnifolia by the whip-and-tongue method in March, and to Imelanchier and Sorbus aucuparia by budding in August. Within the objectives of the trial, it was established that certain pear varieties appeared to have a satisfactory affinity for Amelanchier alnifolia rootstock, regardless of grafting method. About 35 per cent of the pear varieties established initially healthy bud union on Sorbus aucuparia.

In an attempt to induce haploidy in strawberries, the following chemicals were applied to emasculated blossoms of the varieties Redstar, Redcoat, Superfection, and Sparkle: 1) gibberellic acid, 10,000 p.p.m. aqueous solution; 2) colchicine, 2 per cent aqueous solution; 3) acenaphthene, saturated aqueous solution; 4) p-dichlorobenzene, saturated aqueous solution; 5) nucleic acid, saturated aqueous solution. These treatments were applied with and without the addition of the aerosol dioctyl sodium sulphosuccinate. Seeds were obtained after treatment with gibberellic acid and acenaphthene from the varieties Redcoat, Superfection, and Sparkle. These seeds were germinated, and the root-tips of the seedlings were examined cytologically. Germination was relatively easy, and the seedlings obtained did not display any exceptional features, as have haploid seedlings when found in other plant genera. The seedlings were vigorous and healthy with chromosome counts greater than 28, which is the number required in a haploid strawberry plant. It was concluded that the treatments did not induce haploidy.

Strawberry and raspberry plants did not respond to F.W. 450 treatment, and

no male sterility was induced.

Organic soils appeared to be very suitable for increasing new varieties of strawberries and raspberries, as propagating conditions were ideal and isolation was good to very good, providing some freedom from virus infection.

TOMATOES AND VEGETABLES. Further studies were conducted on the influence of different temperatures and of 2 chlorethyl-trimethyl-ammonium chloride (CCC) on tomato yields. The results indicated a reduction in early and total tomato yields with 10^{-3} M soil drenches applied at the 2 to 4, 4 to 6, and 6 to 8 true-leaf stages and in the field. On the other hand, foliar sprays at the same concentration tended to increase early and total yields slightly, especially when applied at the 4 to 6 leaf stage and in the field. There was some reduction in plant size with the drench treatments. This reduction was most severe when the drench was applied at the 2 to 4 leaf stage, but was practically non-existent in plants drenched after field setting. By careful timing of drench applications it would seem possible to produce tomato plants at any size desired.

Foliar sprays of 50, 100, and 200 p.p.m. of NPH87 (Trylone compound) applied to Fireball tomatoes in the early stages of plant development (2 to 4 true-leaf stage) reduced the early yield. However, an application of 200 p.p.m. when 50 per cent of the blossoms were open on the first and second clusters increased the early yield by 15 per cent. None of the chemical treatments increased the total yields. When tomatoes were treated in the early stages of development, they produced a shoestring virus-like symptom similar to that produced by 2,4-D injury. In addition, the simple leaves united to form a compound potato-type leaf. These symptoms disappeared in the later stages of growth.

Plots were treated with 145, 390 and 635 pounds per acre of urea with the different biuret levels of 0, 10, 15, and 35 pounds per acre. There were no significant differences in early and total yield whether biuret was present, irrespective of concentration, or absent. This finding was contrary to published findings on biuret injury to plants.

Preliminary studies in the greenhouse with tomatoes indicated that low levels of biuret, in the presence of relatively high concentrations of urea, actually produced less toxic effect than was observed on plants receiving biuret-free urea.

Three rates of potassium (150, 300, and 600 pounds K_2O per acre) were applied from KC1, KNO3, and K_2SO_4 salts to Fireball tomato plots. No rate of potassium application produced any difference in early yield. However, the source of potassium was important. KC1, KNO3, and K_2SO_4 produced 5.1, 6.2, and 6.1 tons per acre of early tomatoes, respectively, the last two yields being significantly higher than that produced by KC1. On total yield the rate had no influence, and for KC1, KNO3, and K_2SO_4 salts, the yields were 19.2, 20.6, and 21.7 tons per acre, respectively. These differences were not significant.

Forty-one tomato introductions were grown in the Georgian Bay area, eight of which were retained for possible breeding value. One from France showed extra early "cold set"; one from New Zealand showed dark and vigorous foliage; one from Thailand and four from Italy had superior foliage retention; and one from

Germany was crack resistant.

Over a 45-year period, average June temperature minima in the Guelph area were nearly 4° F lower than in New York State. For this reason, many imported tomato varieties failed to set well on early formed flower trusses. Variety trials under conditions of controlled temperature showed that Red Bobs, Johnny Jumpup, the Alberta variety Earlinorth, and the Nagcarlan wild type from the Philippines, would set fruit at 52° For slightly lower, and the latter two would set fruit at temperatures as low as 45° F. Most varieties adapted to setting at low temperatures were of small size, but hybrids of commercial, large tomatoes and the purple-fruited Nagcarlan Filipino type had rough but fair-sized fruits. These were distinguished by carrying the newly located genes for red colour intensity ("Crimson") and were 22 to 28 per cent "redder" than those contained in standard commercial processing varieties such as Viceroy and Stokesdale. A feature of the "crimson" factor was that, under Georgian Bay conditions, it permitted high colour on tomato fruits to be held much later in the season than was true with standard varieties. This feature, if established in smooth, high-yielding, good quality hybrids, would permit an extension of the harvest season. To study a possible linkage between the "crimson" gene and the ability to set fruit under low temperatures, seed of "crimson" material was sent to areas where night temperatures in June are often below 55° F. Over 70 seed samples with the newly located genes A1A1a2a2 for the "crimson" phenotype were distributed.

A report has been distributed on the fresh market tomato (stake and bush),

determinate and undeterminate types, and watermelon variety trials.

A ground-rock material (Nu-Life) containing calcium, phosphorus, magnesium, and a number of trace elements was applied at rates of 500, 1,000, and 1,500 pounds per acre to carrots, snap beans, potatoes, and tomatoes, with and without phosphorus as superphosphate, and at adjusted pH levels of 6.3 and 7.3. None of the phosphorus or ground-rock material treatments at either pH had any influence on yield and quality of any of the crops.

Delicious 51 and Harper Hybrid muskmelons were treated at different stages of growth with various rates of gibberellic acid (GA) and 2-chlorethyl-trimethyl-ammonium chloride (CCC). Some treatments were made in the greenhouse when

the first true leaf was one to two inches in breadth; the other treatments were made after plants were set in the field. The GA was applied as a foliar spray at 10 and 100 p.p.m. in both the greenhouse and the field. CCC was applied to banded plants in the greenhouse and in the field, both as a soil drench and as a foliar spray of 10-3M solution. The GA foliar application of 100 p.p.m. in the greenhouse and 10 and 100 p.p.m. in the field increased yields by 43, 17, and 25 per cent, respectively, over the control plants. Using CCC the soil drench and foliar application in the greenhouse and the soil drench in the field increased yields by 27, 23, and 25 per cent, respectively, over the control plants.

Soil and tissue samples from 40 asparagus growers in the Georgian Bay, Essex County, and Norfolk County areas were obtained for analyses in 1961. Trends in soil analyses as related to cropyield were similar in 1960 to those found in 1959. A nitrogen: potash ratio of 1:6 appeared to give the highest yield when the nitrogen

was about 90 pounds per acre at the time of fall sampling.

Asparagus seeded in the greenhouse and lifted when two months old was satisfactorily evaluated for vigour. Mature asparagus roots desirable for propagation were found to survive asexual propagation by root division better when grown in muck soils than when grown in other soils.

A preliminary model of self-propelled harvest aid for asparagus was com-

pleted.

F.W. 450, when applied at 0.2 and 0.5 per cent concentrations to spinach and squash in the greenhouse, induced male sterility in both crops. In the field, higher concentrations of 1 and 2 per cent were required to induce sterility, and the results were not as satisfactory as those obtained in the greenhouse.

Of a large number of sweet corn hybrids tested, eight were found to be of particular promise. They were VH601, VH605, 1304, 2334, 63420, 68425, 70696, and Illine Chief. The last contained the super-sweet or shrunken "sh" gene in contrast to the sugar gene "su" in ordinary sweet corn.

It was found that early varieties of sweet corn could be grown successfully on

muck land soils.

Of 11 slicing cucumbers (10 hybrids and one non-hybrid) that were listed, one hybrid (H-149) showed promise and might be an improvement over the Burpee Hybrid now in general use in glasshouse cucumber production.

Seven standard varieties of cucumbers were compared with the all-female F1 Spartan Dawn and six other all female F1 types. Spartan Dawn was outstanding in earliness, heavy yield, and smaller than average fruit size. It was acceptable

under brine-stock evaluation.

Inheritance studies of carrots grown on muckland soils resulted in the establishment of six male-sterile lines. Several experimental hybrids appeared to be attractive in the field, and small seed increases were made of five new hybrids in

the greenhouse.

Variety and cultural trials were continued on potatoes, onions, lettuce, broccoli, celery, and corn at the Holland Marsh. Potato varieties Blanca, Hunter, and Arenac appeared to be well suited to production on organic soils; also, it appeared that Arenac was a good processing variety when produced on organic soils. In onions, Trapp's Hybrid #2 variety was superior to all others, including the standard variety. Autumn Spice.

After a two-year study, it was apparent that rhubarb could be forced successfully after being grown for one year on muck soils. Yield per root was comparable to that from plants grown for two years on mineral soil, while yields per square foot of forcing bed were considerably higher. Recommendations for the production of forcing crowns had been for growing for three years in the mineral soil, or for two years under exceptionally favourable conditions. Ontario practice had been to grow the plants for two years on well fertilized mineral soils.

FLOWERS. Roots of the Crackerjack variety of *Chrysanthemum morifolium* were washed free of peat and sand, and extracted with methanol. Paper chromatographic separation was done with the solvents butanol and N-butanol-acetic acid-water (60/15/25 V/V/V). Eluates of sections were tested for their effect upon wheat coleoptile growth, and they were tested with Ehrlich's and Salkowski's reagents for indole compounds. The sections extracted with butanol demonstrated that a coleoptile growth promoter was located in the Rf 0.3 to 0.5 region and an inhibitor in the Rf 0.9 to 1.0 region. The N-butanol-acetic acid-water extract showed no inhibitors, but promoters were detected in the Rf 0.7 to 0.8 region and 0.4 to 0.5 region. Indole compounds could not be detected.

In other trials, the Yellow Shasta variety of chrysanthemum plants was grown in washed silica sand at 8- and 16-hour photoperiods and in a peat-sand mixture under normal commercial photoperiods. Various extracting solutions and extract treatments were used for plant roots, and extracts were placed on vegetative-phase plants of this variety of chrysanthemum. Growth inhibitors in the Rf 0.7 to 0.8 region and 0.9 to 1.0 region were found in root extracts of long-day grown plants and in the Rf 0.9 to 1.0 region when the extracts came from short-day grown plants. Extracts from roots of plants grown in peat and sand and subjected to commercial late winter photoperiod showed no growth regulating effect.

Plants of Callistephus chinesis (Aster var. Ball's White Early) were exposed to photoperiods of 8 and 16 hours and to 100 p.p.m. gibberellic acid (GA) sprays. Plants were collected after one day and one, two, and three weeks following photoperiod exposure, and after three GA sprays. The leaves and stems were extracted with methanol and subjected to paper chromatographic extractions with 80 per cent isopropyl alcohol as solvent. Eluates of the chromatogram sections were used in randomized block growth bioassay tests with wheat coleoptile sections. In all cases, a promoter was present in the Rf 0.3 to 0.4 region. In control (12-hour) plants, a small amount of the promoter was found at the Rf 0.8 to 0.9 region, and more was found in plants sprayed with GA. Indole carboxylic acid was present, regardless of treatment.

In another test, aster plants from 8- and 16-hour photoperiods were extracted in acetone-water and subjected to paper chromatography using N-butanol-ammonia water $(10/1/1~{\rm V/V/V})$ as solvent. The eluate from paper sections was placed on Little Marvel dwarf peas. Inhibitors in the Rf 0.0 to 0.4 region and 0.7 to 1.0 region were found in extracts of short-day plants only. No inhibitors were detected in extracts of long-day plants.

LIVESTOCK

BREEDING. Sire summaries for type were prepared regularly for all registered dairy sires in Canada with 10 or more officially classified daughters. During the past year, 1,016 individual sires were studied and reported.

Dairy sires being rated in Canada on a contemporary comparison basis, only first lactation records were used. Modifications of this method were studied in an attempt to improve its accuracy and its ability to evaluate a larger number of bulls. During the past year 87,309 production records for Holstein-Friesian cows, calving between March 1, 1957, and February 28, 1959, were utilized. One method, which compared the first lactation daughters of a bull with all contemporary stablemates, looked promising because it evaluated approximately 77 per cent more bulls, with ratings on the same bulls being slightly more repeatable from one season to another. The ranking of bulls by this modified method was very similar to that of the presently used system.

The relationship between 62 different detailed type characteristics in Holstein-Friesian females officially classified for type during 1959-60 were studied. A number of characteristics appeared to be fairly closely related, indicating that they might be controlled by the same genes, at least to some extent. Such characteristics are shallow heels on both front and hind feet, open toes on both front and hind feet, and funnel-shaped teats, both front and rear. Weakness in some characteristics also appeared to cause a weakness in others; for example, cows with weak pasterns usually had shallow heels.

A study of the merchandising value of type and production records, based on information from the sale of 9,234 Holstein-Friesian cattle, showed that, on the average, cows with official production records sold for \$100.00 per head more than cows without them. Females classified for type averaged \$80.00 per head more in the sale ring than unclassified ones.

Data from 16,455 Holstein-Friesian animals showed that black spotting as related to spots touching the hoof was 50 per cent heritable.

The College dairy herd was used to determine the amount of genetic improvement which could be made through a program of intensive selection when coupled with the use of proven sires. Young, untested bulls were used on only a sample of heifers, to get a progeny test before being used on the main breeding herd. During the past year, average production in the herd continued to increase.

A study on the relationship between levels of production between first lactation records and subsequent records of Jersey cows in Canada was completed. A total of 4,576 lactations, ranging from one record to six records per cow, were used. The results were as follows: (1) on the average, high production during the first lactation was followed by a high level of production in subsequent lactations; (2) breed programs which gave special emphasis to high-record two-year-olds appeared to be sound, since these cows followed through with more records per cow and at a higher level than their contemporaries with low-level records; (3) sire proving programs based on two-year-old records appeared to identify those sires which were of superior breeding value for production at all ages; (4) although it might be disappointing to see that high-record two-year-olds, on the average, did not produce quite as well in subsequent lactations as in the first, they were superior to those cows that started at a lower level of production; (5) there seemed to be little to substantiate the claim that high production at the two-year-old level injured future usefulness.

On April 1, 1961, the testing period for beef bulls under the Advanced Registry Policy was reduced from 168 days to 140 days. Since that date, 3 Aberdeen Angus, 3 Galloway, 9 Shorthorn, and 50 Hereford bulls completed the test at the Advanced Registry Station at Arkell. For Aberdeen Angus, initial weights, final weights, average daily gain on test, and weight per day of age at the end of test averaged 573 lb., 925 lb., 2.52 lb., and 2.42 lb., respectively; for Galloway, 526 lb., 858 lb., 2.37 lb., and 2.33 lb., respectively; for Shorthorns, 576 lb., 912 lb., 2.40 lb., and 2.38 lb. respectively, and for Herefords, 559 lb., 918 lb., 2.58 lb., and 2.40 lb., respectively.

The records of 433 Station-tested bulls were calculated on a 140-day test period and compared with their 168-day records. The mean average daily gain on a 140-day test was 2.45 lb. and on the 168-day test 2.44 lb. The rank correlation between the 140-day test period and the 168-day test period was 0.923. Hence, it would appear that the 140-day testing period was as reliable as the 168-day test-

ing period.

In April 1961, the beef herd was entered on the herd test program of the Advanced Registry Policy for Beef Cattle. The average adjusted weaning weights (205 days of age) and yearling weights obtained to date are:

		Adjusted Weaning Weight	Yearling Weight
Aberdeen Angus	male female	42 3 lbs. 380	599 lbs.
Hereford	male female	454 444	673
Shorthorn	male female	463 426	652

The gradings were studied on 17,157 hog carcasses within the 125- to 195-lb. weight range, marketed by 67 producers in 1960. Of these carcasses, 15,884 were within the A grade range (135-170 lb.). Carcasses graded D (16) and "ridgling" (54) were excluded from the study. Of the 15,884 carcasses, 51.7 per cent were grade A, 41.5 per cent grade B, and 6.8 per cent grade C. Using all observations, the grade of hogs marketed decreased with carcass weight. In the weight range of 135- to 150-lb. the percentage of top grade hogs decreased by 1.6 per cent and in the 151- to 170-lb, range by 1.9 per cent for each pound of increase in carcass weight. A detailed study on a "within-herd basis", using 54 herds that marketed 70 or more hogs, indicated that the relationship of weight and grade was an individual herd matter. In certain herds the system of marketing was such that the poorer grade hogs were being marketed at lighter weights, leaving the better grade hogs to be marketed at heavier weights. In other herds a decline in grade was noted. This decline was so linked with increasing carcass weight that net returns were reduced by carrying hogs to heavier weights. A program of marketing at lighter weights was recommended for these herds.

During 1961, 69 litters were born in the College swine herd. There was an average of 9.9 hogs per litter at birth, and the average birth weight was 2.7 lb. The average number of hogs weaned per litter was 8.5, and the average weaning weight was 37 lb. The average weight at 140 days was 164 lb., and the average age at 200 lb. live weight was 161 days.

NUTRITION. In a feeding experiment with veal calves to determine the effect of fat added to a milk replacer, the following results were obtained:

	Average Daily Gain to		Dressing Percentage at		Grade		Average Price per 100 lb.	
	225 lb.	275 lb.	225 lb.	275 lb.	225 lb.	275 lb.	225 lb.	275 lb.
Whole milk	2,22	2.25	67.1	66.2	3 good 1 medium	2 choice 2 good	\$25.62	\$26.92
Regular milk replacer	1.65	1.90	62.6	61.5	1 medium 3 fair	1 medium 3 fair	20.91	21.10
Milk replacer plus 10% fat		1.78	62.1	62.2	2 medium 2 fair	2 medium 2 fair	21.20	22.72
Milk replacer plus 15% fat		1.90	64.5	63.3	1 medium 3 fair	2 good 2 medium	21.28	23,28

Early-, medium-, and late-cut hay from the same meadow were fed to 18 lactating cows for nine weeks on a "switch over" type of design. Hay was the only forage fed, and grain was fed at the rate of 1 lb. for 6 lb. of 4 per cent fat-corrected milk. Hay consumption, milk production, and weight maintenance were significantly greater for cows fed the early-cut hay than for those fed later cuts.

Corn silage to which 1 per cent urea had been added at the time of ensiling was fed to Hereford calves weighing 500 lb. initially. Chemical analyses of the silage indicated that there was no increase in true protein due to the addition of the urea, that some of the urea was converted to ammonia, and that 27 per cent of the added nitrogen was lost. The urea in the silage was more palatable than an equal amount mixed with the concentrate portion of the ration. One half of the supplemental nitrogen of the ration was supplied by urea. Average daily gains of the steers over a 184-day fattening period were: 2.08 lb. for steers receiving only soybean oil meal as a supplement, 1.99 lb. for those receiving urea mixed with the concentrate, and 1.93 lb. for those receiving the treated silage. The rations had no effect on carcass characteristics.

Forty-eight steers were used to compare the feeding value in a wintering ration of corn ensiled on August 29 with the same variety (Pride 5) from the same field but ensiled on October 10. During the first 28 days of the trial, the steers fed the early-cut silage averaged 37 pounds gain and those fed the later-cut silage averaged 47 pounds.

Four experimental silos (3,000 lb. capacity) were filled with a mixture of second-cut brome and alfalfa. Different preservatives were used in three silos, and the fourth served as a control with no treatment. Analyses were as follows:

	Moisture	Protein	Fibre	Carotene
	%	% (dry matter basis)	% (dry matter basis)	mg, per lb.
No preservative	83.7	17.8	36.3	74.6
Ground barley (150 lb. per ton)	82.4	18.4	34.2	62.1
Sodium metabisulphite (10 lb. per ton)	83.5	16.1	28.5	83.4
Silo-tracin (10 lb. per ton)	83.8	16.3	33.6	75.0

From shortly after weaning, 40 steer calves averaging 507 lb. in weight initially were self-fed grain and hand-fed hay and soybean oil meal until marketed at a weight between 950 and 1,000 lb. The group consisted of 3 Herefords, 9 Shorthorn-Hereford crossbreds, and 28 Charbray-Hereford crossbreds. One half of the steers received p-hydroxypropiophenone (BDH 217) in the soybean oil

meal. Eighteen steers received an interperitoneal injection of ruelene for warble control. The results were as follows:

	Average Daily Gain Ib.	Choice Carcasses %	Area of Longissimus dorsi Muscle sq. in.
Herefords	2.52	100	8.65
Shorthorn x Hereford	2.40	100	8.22
Charbray x Hereford	2.51	59	9.32
Ruelene Treated	2.47	76	9.40
Not Treated	2.43	73	9.31
BDH 217	2.50	65	9.38
No BDH 217	2.54	84	9.32

When examined in May the ruelene-treated cattle averaged 8.1 grubs per steer, and those not treated averaged 11.0 grubs per steer.

Hereford steers weighing 900 lb. initially were fed on fattening rations in which the protein supplement was (a) soybean oil meal, (b) half soybean oil meal and half urea with cracked corn, and (c) urea with cracked corn. The steers received 0, 0.1, and 0.2 of a pound of urea on these three treatments, respectively. Equal quantities of bromegrass hay and oat straw were fed as roughage. Replacing half the soybean oil meal with urea did not appear to reduce the palatability of the ration, but replacing all of the soybean oil meal did reduce palatability and, hence, feed intake. When gains were adjusted for feed intake, there were no significant differences between treatments. The use of urea in the ration did not affect carcass grade, carcass value, the area of eye muscle, or dressing per cent.

The feeding of a copperized mineral mixture to cattle with medium levels of blood copper was continued. The cattle in two herds, which had initial respective copper values of 67 and 62 ugm. per 100 ml. of serum, were fed 1 and 2 gm. of copper sulphate daily, respectively. The serum copper remained at medium levels for most of the trial, but after 14 months the values were 85 and 77 ugm. per 100 ml. of serum.

Forty-eight hogs were allotted to 12 treatments involving 6 levels of feed intake, at 2 protein levels, during the finishing period. Each replicate consisted of 12 pairs (1 gilt and 1 barrow per pair). Replicate I started at an average weight of 140 lb., replicate II at 120 lb. All hogs were individually fed a pelleted ration. The levels of feeding were as follows: according to appetite, up to a maximum of 5-1/2, 6, 6-1/2, 7, 7-1/2 lb. or ad libitum. The hogs were marketed at 200 lb. live weight, after removal from feed, and were scored according to the method used in Record of Performance for Swine. The results were as follows:

Maximum Daily Feed Intake	Average Intake During Finishing Period	Average Daily Gain	Feed per 100 Lb. Gain
5-1/2 lb.	5.45 lb.	1.49 lb.	374 lb.
6	5.94	1.64	366
6-1/2	6.42	1.78	366
7	6.73	1.87	367

7-1/2	6.94	2.02	345
-1/2		2.02	949
Ad libitum	7.33	2.05	359
Low protein	6.45	1.76	368
High protein	6.49	1.86	357
Females	6.32	1.81	357
Males	6.61	1.81	369

HOUSING AND MANAGEMENT. In the spring of 1961 a herd of primary specific-pathogen-free (S.P.F.) hogs was established at the College. During the first eight months 85 caesarean-derived S.P.F. pigs were received from the Ontario Veterinary College. These hogs were from 18 different litters and carried the blood lines of 12 unrelated sires. Fifty-seven hogs were reared in colony houses to weights exceeding 200 lb. each. As the colony houses had been used previously, thorough cleaning and disinfecting preceded their use by the S.P.F. pigs. The hogs were 5 to 6 weeks old when received and they weighed 8 to 10 lb. each. Prestarter pellets and unpasteurized cow's milk were fed until the hogs were 12 weeks of age, at which time they were eating a 16 per cent protein grower ration. Their performance exceeded expectations. Later, when the new piggery at Arkell was completed, 28 hogs were reared indoors; they had no better performance than those reared in colony houses and had more swollen joints, probably due to the slatted floors. Nineteen hogs died or were destroyed, because of injury or various diseases. Examination of the head and lungs of 28 hogs revealed no evidence of atropic rhinitis or virus pig pneumonia, S.P.F. herd averages on 47 hogs that reached 200 lb, body weight were as follows: 56day weight - 19 lb.; 112-day weight - 84 lb.; 140-day weight - 131 lb.; the age at 200 lb. was 178 days. The feed required per 100 lb. live weight gain was 270 lb.

Snow accumulation around farm buildings was studied to find the proper location of buildings and equipment on the farmstead. The accumulation around model structures was studied in a water flume and in a wind tunnel.

The proper height, spacing, and location of snow fences and wind barriers was studied in a wind tunnel.

An investigation of nailed plywood gusset plates for timber trusses showed that concrete nails provided greater strength and holding power than the nails normally used for this purpose. The use of concrete nails was thus more economical, because fewer nails were needed.

Tensile strengths of 25 lb. per square inch were obtained when epoxy resin adhesives were used to bond aluminum roofing to wood purlins. The use of adhesives obviated nailing, which tended to cause leaks in metal roofs.

POULTRY

BREEDING. A male line for broiler-breeding work was developed and entered in the experimental section of the Central Random Sample Meat Test, Ottawa, for evaluation

A project concerned with the development of tolerance between host and donor progressed to the point where Barred Rock and White Leghorn chickens accepted skin grafts from each other.

In turkeys, cross-strain females laid more eggs and gave a higher hatchability than the pure strain females produced by the same parent lines.

Immunological studies to determine inherited characteristics in fowl by serological methods were continued by producing antisera in several families

within two familes of White Leghorn chickens. Birds were tested with these antisera and matings were made, based on these blood tests. Suitable reagents developed for these tests supplanted those previously obtained from other sources.

NUTRITION. When certain argmine-deficient diets were supplemented with arginine, the development of muscular dystrophy in the chick was shown to be a non-specific effect. Isoleucine, lysine, or tyrosine supplementation of diets deficient in these amino acids also caused dystrophy, provided that in each case the sulphur amino acid content of the diet was second limiting for growth. The activity of L-cysteine in preventing the occurrence of muscular dystrophy was completely abolished by S-benzyl substitution or removal of the cx-amino or carboxyl group. Similarly, no protection was provided when DL-methionine was replaced by the N-acetyl, sulphone, or sulphoxide analogs. Degeneration of the breast muscle of chicks fed dystrophy-promoting diets from one day of age was more severe at five weeks than at eight to 11 weeks. This observation suggested that spontaneous recoveries from the disorder might occur. Supplementation of the ration with vitamin E, when the chicks were five weeks of age, resulted in complete remission of the symptoms of dystrophy within three weeks.

The biological assay for metabolizable energy in poultry ration components was improved. The revised technique involved the feeding of the test material at not less than three levels. Mineral and vitamin supplements were added to both control and test diets at constant levels. The actual derivation of a metabolizable energy value involved both a regression analysis and the solution of simultaneous equations based on all possible pairs of diets. The assay overcame many of the criticisms levelled at other techniques.

Metabolizable energy values were usually corrected to nitrogen equilibrium, a practice which involved additional laboratory assays. An examination of 742 classical and corrected values indicated a high degree of association (r=0.996 at 740 D.F.) between the variables. Apparently the magnitude of the nitrogen correction could be predicted with a high degree of accuracy from knowledge of the uncorrected metabolizable energy value. The correction was not greatly influenced by either the quality or quantity of protein in the diet.

Investigation of possible chemical assays for metabolizable energy met with some success. As much as 89 per cent of the variability in metabolizable energy values could be accounted for by some of the prediction equations derived.

The accumulation of metabolizable energy values for poultry feeding stuffs of Canadian origin was continuing. A table listing values for 41 feeds was prepared.

The metabolizable energy value of hydrolyzed feather meal was found to be 1.0 Calorie per gram, or approximately 19 per cent of its gross energy content. Evidence indicated that the prime value of hydrolyzed feather meal might be as a source of "non-specific" nitrogen.

In experiments with growing chicks and cockerels, tallow was more effectively used as the chicks became older, and many fats interacted with one another; but the cause of the synergism remained unknown. At low levels of dietary inclusion, fats possessed beneficial extra-caloric properties of a chemical nature; this extra-caloric response could not be explained on the basis of a single fatty acid. The metabolizable energy values of several fats, fat by-products, and fat mixtures were determined.

The variations in metabolizable energy values, observed when high protein feeds were assayed, were found to be primarily a function of the assay technique rather than of the level of inclusion of the test material. The development of a

new assay eliminated much of the variability.

Riboflavin, niacin, vitamin B_{12} , and methionine all influenced dietary metabolizable energy values. Several micronutrients were apparently involved in complex interactions.

Energy utilization increased with increasing salt concentration in the feed and/or drinking water. Forty-five per cent of the chicks which were fed a ration containing 16 per cent salt from one day of age were alive at four weeks.

The nutritive value of mature wheat was not changed significantly by sprout-

ing or by sprouting and freezing or by sprouting and mold development.

A considerable volume of data relating production functions to dietary Calorie: protein ratios was accumulated. It was apparent that (a) low Calorie: protein ratios could inhibit growth, (b) the Calorie: protein ratio should be varied inversely with environmental temperature, and (c) the optimal Calorie: protein ratio decreased as the biological value of the feed protein decreased.

Debeaking White Leghorn pullets at eight weeks of age caused a significant reduction in their weight at 20 weeks of age and prevented them from consuming grit when it was offered in separate containers. Debeaking at either eight or 20 weeks of age delayed physical and sexual maturity. More data would have to be accumulated before debeaking could be recommended as a method for delaying sexual maturity, but it showed promise.

There appeared to be no interaction between copper sulphate and procaine penicillin G, when these were included as supplements in diets for growing pullets.

In diets of laying hens, replacement of soybean oil meal by equivalent levels of lysine and methionine mixed with wheat did not prove satisfactory.

There were no interactions between terephthalic acid and either oxytetracycline or chlortetracycline insofar as reproduction criteria with White Leghorn hens were concerned. However, terephthalic acid increased egg production significantly. This observation had not been reported previously and might be of considerable economic importance.

Reducing the dietary calcium from 3.0 to 0.1 per cent in antibiotic medicated poultry diets caused an increase in the seven levels of the antibiotic used. The addition of terephthalic acid to aureomycin-medicated diets containing 3.0 per cent calcium overcame the depressing effect of calcium and produced seven levels similar to those obtained with 0.1 per cent calcium. The addition of terephthalic acid to terramycin-medicated diets containing 3.0 per cent calcium resulted in antibiotic serum levels which were not altered in floor reared hens and which decreased in caged hens. Results indicated that the mechanism of antibiotic potentiation involved the intestinal microflora and suggested the emergence of antibiotic resistant strains of microorganisms.

PHYSIOLOGY. Diurnal cholinesterase fluctuations were observed in the plasma of laying hens. These fluctuations suggested that cholinergic neurons were involved in the release of neurohypophyseal hormones, which most likely played a major role in the rate of lay. The length of time since last ovipositon appeared to affect the plasma levels of sodium, potassium, and calcium ions, as well as the level of cholinesterase.

Certain 19-norsteroids, when supplied at the proper dose level, delayed the onset of oviposition in young birds sufficiently to eliminate "peewee" eggs and to regulate the onset of production. In older birds - which had been laying for 15 months - egg weight, shell weight, and Haugh units were increased.

The rate at which DNA is taken up by the developing embryo was established.

Feather colour transformation did not take place.

HOUSING AND MANAGEMENT. Pullets reared on range laid 10 per cent of their eggs on the floor, as compared to 50 per cent by similar pullets grown in confinement. The type of floor also influenced the percentage of floor eggs, the incidence being consistently 10 per cent higher from birds on litter than from those on wire or slatted floors.

Cages were fitted with air jets to ensure movement in environmental chambers which were used to determine the effect on survival of laying birds at high temperature and humidity. These jets had no effect on survival, either at high temperature or at high humidity, probably because of the high rate of circulation in the chambers.

UTILIZATION OF PLANT AND ANIMAL PRODUCTS

DAIRY PRODUCTS. A survey of the composition characteristics of milk from dairy herds and plants in Ontario was inaugurated. To date some 4,000 samples from 1,200 individual cows in 40 herds (10 Holstein-Friesian, 10 Ayrshire, 10 Guernsey, and 10 Jersey) were tested for fat, total solids, solids-not-fat (Golding bead test), protein, and lactose. The influence of age of cow, stage of lactation, season of year, breed, and sire strain on the various milk constituents were to be studied. The precision and accuracy of the test methods used were determined, and a control system was established to maintain the levels of precision and accuracy. The official (Association of Official Agricultural Chemists) test for total solids was replaced by a test with the same accuracy but greater rapidity. In the first 500 samples analysed, total solids ranged from 9.57 to 19.04 per cent, solids-not-fat from 6.47 to 10.62 per cent, and protein from 2.46 to 5.38 per cent.

Results to date indicated that the method of determining the per cent fat by a photometer could not be applied with greater accuracy than 0.4 per cent to samples of milk from individual cows of four dairy breeds.

A cryoscopic study of over 1,000 samples of raw milk from areas not previously studied indicated that the range was 0.535 to 0.550° C.

As a result of modifications in procedure and techniques the accuracy of determination of freezing point depression with the Fiske Model J Cryoscope was significantly improved.

Weekly consumer preference studies on the effect of the addition of lactose to chocolate milk indicated that the lactose might replace some of the fat. The addition of the lactose had no noticeable effect on consumption, in comparison with high-milk-solids chocolate milk.

Studies were made on the physiological activities of six selected lipolytic and proteolytic heat labile genera of microorganisms found in milk products. The accumulated knowledge of the interrelationships and associative action of these organisms was valuable in assessing their possible role in flavour development.

Weekly samples of skim-milk powder were obtained from 80 per cent of Ontario spray powder plants. These samples were graded for quality by the direct microscopic clump count (DMCC). There appeared to be a very close relationship between atmospheric temperature and bacterial numbers as determined by DMCC. As temperatures increased, DMCC's also increased, and vice versa.

Ice cream was successfully frozen by liquid nitrogen. The rapid hardening improved the texture of the ice cream by eliminating coarseness. However, the use of liquid nitrogen created other body characteristics which were not resolved.

An electrical transmitter-recorder was modified to a conventional beam scale so that packages of ice cream or other dairy foods could be continuously weighed and recorded. This equipment controlled the weights of packages accurately and provided better means of cost control.

The use of annatto colours for colouring butter caused some of the parchment liners to become discoloured. Chlorine treatment of the parchment appeared to be a major cause of this discolouration. The more alkaline the chlorine solution, the greater was the liner discolouration. High storage temperatures contributed to the leaching effect, while low temperature storage had an inhibitory effect.

The leaching of the colour took place during the initial storage period while the parchment was still wet. The problem was resolved either by reducing the pH of the chlorine solutions for parchment treatment or, preferably, by substituting strong saline solutions for the chlorine solution.

A simple, accurate method for determination of the total phospholipids in butter was developed.

About 1,000 cheese samples were analysed for moisture, salt, and pH. These analyses were being correlated with cheese scores on the first and subsequent gradings. The First Grade cheese had a moisture content of 34.95 per cent, a salt content of 1.71 per cent, and a pH of 5.13.

A full-fat Cheddar cheese was melted and emulsified as a high moisture liquid and spray-dried in a commercial drier. Storage trials on this powder indicated that it had a storage life of five months at $45^{\circ}\,\mathrm{F}$ or $75^{\circ}\,\mathrm{F}$ and three months at $100^{\circ}\,\mathrm{F}$. A method was developed for manufacturing cheese bars from the spray-dried cheese. These would be suitable for ration packs.

In an attempt to control airborne contamination in culture rooms and in cheese packing rooms, various filters were tested. Some of the filters were impregnated with bactericidal substances. In more than 100 trials under controlled conditions, these filters removed from 50 to 75 per cent of the pollen and either removed or destroyed gram positive bacteria, but had little effect on gram negative bacteria. The impregnated filters did not destroy gram negative bacteria or molds.

The use of an electrostatic air filter, with air gently passed over the screen, was being studied. The data from 120 trials indicated that the filter was not very effective in reducing the total amount of dust from air by convection circulation.

Twenty sides of beef from the top three MEAT AND POULTRY PRODUCTS. Canadian beef grades (Choice, Good, and Standard) and in the different weight ranges were cut into the wholesale cuts, and then these were cut into edible meal, bone, and excess fat. The edible meat portion was trimmed of excess fat to a maximum of approximately 1/4 of an inch. Results indicated that the range of yield of edible meat within the top three Canadian beef grades (68 to 76 per cent of the carcass weight) was not as large as reported for United States beef grades. Yield of bone varied from 15 to 19 per cent, and excess fat varied from 6 to 18 per cent of carcass weight. The range in yields of edible meat for the Choice grade was 68 to 73 per cent, for the Good grade 72 to 74 per cent, and for the Standard grade 71 to 76 per cent. There did not appear to be a relation of yield of edible meat to carcass length, carcass weight, area of eye of lean, or percentage bone. The yield of edible meat appeared to be inversely related to the amount of excess fat, and this excess fat could be estimated with some accuracy by visual appraisal of the carcass before cutting.

Results of tenderness tests with a shear metre on steaks from 95 steer carcasses indicated that wide variations in tenderness existed within each of the top three Canadian beef grades, and that these grades were not correlated with tenderness in beef.

Twenty-seven carcasses of veal calves were cut into wholesale cuts and then into edible meat, bone, and excess fat. The left side was slightly heavier than the right side, but the yield of edible meat was slightly higher in the right side.

The difference was due to heavier bone in the left side of most carcasses. The consistent difference was not due to the method of splitting veal carcasses at the packing plant. The yield of edible lean ranged from 68.0 to 72.6 per cent of bone from 24.3 to 29.5 per cent, and of excess fat from 1.9 to 6.1 per cent. There was no indication of a relationship of differences in yield to rations fed or marketing weights of calves or packer grades of carcasses.

A total of 2,681 calves marketed in the spring of 1961 averaged \$27.68 per cwt. in selling price, with an average live weight of 271 lb. Calves within the weight range of 243 to 312 lb. received the highest prices on the average. Calves from beef breeding or from a beef-dairy cross received higher prices, on the

average, than dairy calves.

A 20-week study of the quality of eggs received at four widely scattered Ontario Egg Grading Stations revealed that the percentage distribution by grade of eggs marketed from all test flocks was 90.7, 2.7, 0.7, 4.7, and 0.9 per cent Grade A, B, C, Cracks, and Rejects, respectively. Grading receipts for the individual flocks showed a range of from 76.7 to 97.9 per cent Grade A eggs during the test period. The average broken-out score of all eggs sampled was 73.3 Haugh units, while the quality for individual flocks varied from 61.4 to 89.2 Haugh units. The age of the bird and the care and handling of the eggs on the farm were dominant factors influencing the quality of eggs received at these stations.

Eggs coated with a special transparent plastic protective film of a polyvinyl chloride complex formulation did not maintain quality after 7 and 14 days' storage at 60°F. After 14 days the quality of the plastic-coated eggs was the same as the controls, while eggs oil-sprayed or oil-dipped had a broken-out score of 10 to 13 Haugh units higher than either the controls or plastic-treated eggs.

VEGETABLES, FRUITS, AND FROZEN FOODS. During the 1960 and 1961 processing seasons, 3,000 loads, each of eight tons or more, of mechanically harvested sweet corn ears were sampled at three representative processing plants in Ontario in order to assess the quality of the fresh product as received at the factory. The mechanical picker damaged (crushed, gouged, scraped, or broke) 6.74 per cent of the ears in 1960 and 12.78 per cent in 1961. The debris (weeds, unattached leaves, and stalks) contained in the samples was 1.69 per cent of the total weight in both years. The percentage of Class 1 Usable ears (minimum of 90 per cent fill of edible kernels not injured by insects, birds, etc.) amounted to 48.12 in 1960 and 67.24 in 1961. The relatively lower amount in 1960 was largely a result of excessive insect injury in one factory area. The percentage of Class 2 Usable ears (with 60 to 89 per cent fill of edible kernels and/or a requirement for trimming for insect, bird, or rodent injury) was 36.41 in 1960 and 24.02 in 1961. Poorly filled ears were the most important defect, accounting for 24.90 per cent of the ears in 1960 and 20.80 in 1961; insect-injured ears requiring trimming amounted to 11.33 per cent in 1960 and 2.82 per cent in 1961; injury from birds and rodents was insignificant. The percentage of Class 3 Unusuable ears was 15.66 in 1960 and 8.79 in 1961; lack of fill and immaturity were almost entirely responsible.

During four seasons of testing, the rutabaga (Swedeturnip) was found to be an excellent source of vitamin C (ascorbic acid). About 53 per cent of 34 varieties and selections tested showed a vitamin C content between 40 and 50 mg. per 100 gm. About 25 per cent of this amount could be expected to be lost in cooking, but a sufficient amount of the vitamin would remain in an average serving to supply one-half of the average daily intake requirement. The amount was about twice as much as that provided in a glass of tomato juice and one and a half as much as in a glass of canned or frozen orange juice. It provided the same amount of vitamin C as a glass of Canadian vitaminized apple juice.

The potato variety Blanca, grown on the Bradford marsh, was marketed through a single chain store in 10-lb. bags. As a rule, housewives have not liked the smooth-skinned, low-dry-matter potatoes produced on organic soils, but the response to the questionnaire that was included with each bag showed that they liked the brushed, flaky-skinned Blanca tubers. On a quality basis, they appeared to prefer Blanca to the washed, smooth-skinned potatoes usually marketed from the Marsh. This indication of a favourable reaction was a counter argument to those who claimed that only smooth-skinned tubers could be marketed from the Bradford area.

Certain phases of the study dealing with the effects of modified atmospheres on stored asparagus were repeated. Again, atmospheres with up to 15 per cent carbon dioxide decreased soluble solids and titratable acidity, but increased pH, gain in weight, and tenderness. Further work was done to separate the effects of $\rm CO_2$ and gain in weight (water uptake) in increased tenderness. Fresh asparagus immersed in water under 22.5 inches of vacuum for up to 45 minutes gained up to 9 per cent in weight, but the increase in tenderness was relatively small. Fresh asparagus, when stored dry in 15 per cent $\rm CO_2$ for one week at 35%F, showed a relatively small increase in tenderness. When the asparagus was stored in 15 per cent $\rm CO_2$ with the butts in water, there was a large uptake of water and a relatively large increase in tenderness.

A panelized form of construction for storages in farm buildings was developed, using polystyrene insulation and plywood sheathing. The panels were interchangeable. This method was demonstrated in a walk-in freezer.

By the application of two coats of paint, some porous substances, including plywood, were made sufficiently impermeable to oxygen to be used as gas barriers for controlled atmosphere storages.

CEREAL GRAINS, SEEDS, AND FEEDS. A testfacility was developed to determine the static coefficients of friction of granular materials on various structural surfaces.

In aerodynamic studies of grains, the terminal velocities and drag coefficients of flax, alfalfa, corn, soybean, wheat, barley, and oat seeds were determined by a new vertical wind-tunnel. The results were in good agreement with those of previous free-fall experiments.

Three types of apparatus were constructed, and initial tests were run in order

to determine the crushing and impact strengths of cereal grains.

A conventional grain auger was modified to function as a metering device for feeds.

DISEASE, INSECT, and WEED CONTROL

DISEASES. Tests were conducted with 12 chemicals used as seed dressings for the control of seedling blight and smut in oats. Emergence data showed that seedling blight was not a problem in 1961 and that the incidence of smut was less than one per cent in untreated controls.

High frequency dielectric heating equipment was tested in an attempt to control loose smut of barley seed. There was only a slight indication that such treatment

might be effective.

Further evidence for a cytoplasmic inheritance of tyrosinase competence in Streptomyces scables has been obtained. All strains tested were found to be subject to the specific mutagenic action of several acridine dyes. The mutation was shown to be unrelated to the cytoplasmically inherited respiratory deficiency induced in some yeasts by the same compound. A multi-mutant test strain of S scables was developed and shown to yield readily screened genetic recombinants when crossed with compatible wild types. This test strain was being employed to determine the possibility of genetic compatibility being used for the delineation of species boundaries in the Streptomyces genus.

Continued studies on the nature of streptomycete antigens demonstrated that controlled lysozyme digestion of the hyphae, when followed by lysis of the protoplast-like bodies, resulted in the detection - by diffusion tests in agar gels - of protein antigens present in the internal cytoplasm of the organism. Further studies on the superficial antigens responsible for the previously described passive hemolysis tests showed them to be wall fractions but not part of the rigid cell wall envelope digestible by the enzyme.

All head lettuce varieties tested were susceptible to rootrot disease. Various resistant plant introduction lines were used as sources of resistance. Plants from the $\rm F_4$ population were developed with a high degree of resistance and good heading characteristics. From a descriptive standpoint, rootrot of head lettuce in Ontario appeared to be similar to the disease in New York and California. However, certain physiological features indicated that there might be differences.

The ecology of the tobacco mosaic virus as it occurred on commercial tomatoes indicated that a natural selection took place so that a form of the virus well adapted to its tomato host became the dominant race in any one geographic location. This exclusiveness of the tomato form suggested that tobacco was unlikely to be the main source of inoculum for the tomato crop, since it did not readily harbour the virus form which invaded tomatoes.

Biochemical markers were established by ultraviolet and gamma irradiation for genetical studies of Fusarium.

Experiments were made in an attempt to control blossom blast on fruit trees in the Georgian Bayarea. No reduction in infection could be attributed to dormant mercuric sprays. The distribution by bees of streptomycin mixed with pollen was irregular; little streptomycin was deposited on bloom above seven feet from the orchard floor. This method was costly and ineffective. A spray of 50 p.p.m. streptomycin, with two gallons of glycerin added to each 400-gallon tank of spray, gave about an 88 per cent reduction in infection.

Dodecylguanidine (Cyprex) was tested for the third consecutive year as a fungicide for scab control on apples. Cyprex at one-quarter of a pound plus one pint of Glyodin per 100 gallons of water was applied in all sprays up to third cover spray. Thereafter Glyodin at one pint per 100 gallons of water was used. Scab control was 100 per cent. The check plot, when Glyodin alone or Glyodin plus mercury was applied, had nil to one per cent scab infection on McIntosh. There was no russetting on Delicious and only an insignificant amount of russetting on Golden Delicious.

Experiments were conducted to determine the effects of chlortetracycline on the causal organism of aspergillosis in chicks under hatchery conditions by incorporating varied amounts of the antibiotic in the drinking water. Chicks were infected by dusting the eggs with spores on the eleventh day of incubation. The antibiotic had no significant influence on mold retention in the lungs of the chicks up to 14 days of age, nor was there any significant difference in the rate of gain between the antibiotic-treated group and the infected control group.

Fifteen Salmonella spp., in numbers of 10^9 cells per ml., were suspended in frozen egg melange and subjected to varying dose-levels of gamma radiation. The dose-level required to cause a specific decrease in the number of cells per gram varied over a range of approximately 18×10^4 rads. While survival curves of all species were somewhat similar, there appeared to be a variation of sensitivity among the 15 species. Thirty nine samples of commercial frozen and liquid egg products with high total counts of bacteria were similarly exposed to gamma radiation, and at a dose level of 32×10^4 rads the total counts were considerably reduced in number.

Experiments to detect the presence of Salmonella spp. in feed supplements of animal origin were continued. Salmonella spp. were recovered from 14.1 per cent of 78 samples of dry rendered tankage and from 7.6 per cent of 105 samples of seven other rendered by-products. The infected products exhibited high general bacterial populations which were not related to the coliform count. Salmonella were recovered from samples held at 8°C storage temperature for a year but not from samples held at room temperature for the same period of time.

INSECT AND PEST CONTROL. Investigations on the biology and control of the onion maggot at the Bradford marsh were continued. All insecticides except Diazinon as a seed treatment were granular formations and all were applied by V-belt seeder with dosages calculated on a 15-inch row basis. V-C 13 at 1, 1-1/2, and 2 lb. of actual insecticide per acre, Diazinon at 1 and 1-1/2 lb., and EN 18133 at 1, 1-1/2, and 2 lb. all gave effective control. Diazinon (25 per cent wettable powder) at 4 oz. to 1 lb. of seed was also highly effective. The seed treatment and the higher rates of EN 18133 showed some growth retardation and lower yields. Both Ethion and Trithion, at 1-1/2 and 2 lb. of chemical per acre, resulted in satisfactory, marketable yields, but some maggots were present. Neither Aldrin, Aldrin plus additive TD 244, nor Heptachlor was able to control the maggot.

Field control tests at Burlington for onion maggots in green onions growing in 15-inch rows in sandy soils showed that the following granular insecticides gave excellent commercial control when applied in open furrows before covering the sets: 5 per cent V-C 13 at 20, 30, and 40 lb., 5 per cent Diazinon at 20 and 40 lb., and 10 per cent EN 18133 at 20 lb. of actual insecticide per acre, and Diazinon emulsionfurrow drench at 1 lb. of actual chemical in 40 gallons of water. Ethion

5 per cent granular was much less effective.

Field tests were conducted on the control of root maggots in rutabagas (Swede turnips). Treatments included granular formulations applied by V-belt seeder at time of planting seed and sprays applied when the plants came up and one month later. Diazinon 5 per cent granular at 40 lb. actual chemical per acre retarded growth slightly, and 10 per cent En 18133 at 10 lb. reduced germination considerably; both gave ineffective maggot control. Dylon 50 per cent spray powder was also ineffective. Residual properties evidently are not adequate for the long growing period (June 21 - October 3). Heptachlor and Aldrin, both as preplanting treatments (10-inch bands and rates as low as 2-1/2 lb. of actual chemical per acre) and as sprays at rates to apply 2-1/2 lb. of actual insecticide per acre per spray, gave practically 100 per cent control. This strain of maggot has not developed resistance to the chlorinated hydrocarbon insecticides.

Potato plots at the Hespeler Farm showed no insect injury during the season when treated with Thiodan 2 EC (2 lb. actual chemical per gallon) at the rate of one quart to 100 gallons of spray (with fungicide added) at 10-day intervals from the time the plants were 5 inches high until the tops withered. Control plots on adjacent farms harboured populations of the potato flea beetle, potato leaf hopper, Colorado potato beetle, and the green peach aphid.

A systemic insecticide, Di-Syston, in a 10 per cent granular form and used as an in-furrow treatment on potato seed pieces at plant, gave excellent control of flea beetles, leafhoppers, and early aphids, but did not persist long enough for green peach aphid control.

In the Priceville area, European Skipper (Thymelicus lineola) females preferred red top to timothy as a site for egg deposition. Laboratory studies indicated that skipper larvae are very susceptible to Bacillus thuringiensis, a bacterial disease of insects. Field studies on skipper larvae revealed no parasites other than those previously reported.

WEEDS. The penetration of and persistence in the soil of the herbicide Atrazine was studied in additional plots laid out in 1961, similar to those of 1960. In both years it was found that plots on which corn was being grown had a much higher Atrazine content (63.1 per cent) than plots without corn (31.6 per cent), both series of plots having received the same herbicidal treatment. It was suggested that the high transpiration rate of corn, resulting during the summer in a much drier soil in the corn plots as compared to those without corn, was an important factor in accounting for the difference. During the spring of 1961 the plots which had been treated with Atrazine in 1960 were sown with barley. When examined later in the 1961 season, the plots which had not been planted with corn in 1960 showed a somewhat better stand of barley than did those plots on which corn had been grown.

Atrazine used on corn for at least two successive years was an effective control for perennial weeds, especially quackgrass. Atrazine was applied as a preor post-emergence treatment at the rate of 4 lb. of active material per acre.

A trial use recommendation was made for post-emergence weed control after the final hilling in potatoes. Stam F-34 was effective when applied at the rate of 1 lb. of active material per acre before the weeds were 6 inches high. This was applied as a small particle-size spray such as produced by air blast equipment.

Solan proved to be satisfactory for weed control in celery grown on muck soils.

Tillam, Solan, and an analogue of Eptam (No. 1856) were the most promising herbicides in a test on direct-seeded Fireball tomatoes. In a second series of tests, which included 10 varieties and numbered selections of tomatoes, data indicated varietal differences in response to applications of Vegedex, Amiben, and Tillam treatments.

Several herbicides, when applied immediately after the seeding of carrots, controlled weeds without apparent damage to the carrots and with no reduction in yield. No weeding was necessary from time of seeding until harvest on plots treated with Amiben at 4 lb. or Lorox at 2 and 3 lb. per acre.

Four pre-emergence treatments produced satisfactory weed control in gladioli plots for the entire season. These were Lorox at 2 and 3 lb. per acre, Diuron and Nonuron at 2 lb., and Simazin at 2 and 4 lb. There was no damage to plants of six gladioli varieties at any time between emergence and full bloom.

Extensive tests showed that a petroleum oil fraction (CPC45A) was an effective solvent and carrier for fungicides and insecticides. The fraction had no phytotoxic effect on a number of crop plants at twice the highest possible rate likely to be recommended for application.

OTHER CONTRIBUTORY STUDIES

ANALYTICAL PROCEDURES, ASSAYS, AND MEASUREMENTS. Further investigations were carried out on a "vacuum cup" electrode for the direct analysis of plant ash solutions. Exposures of 60 seconds were required to produce spectra of satisfactory density with both the A.C. spark and the D.C. condensed arc. Studies with shorter exposures indicated that a pre-excitation period before photography was desirable, particularly with the condensed arc. Good agreement between wet chemical methods and the spectrographic procedure using A.C. spark excitation was found for the minor elements - boron, manganese, and iron. Erratic results were obtained for copper and the major elements - phosphorus, magnesium, and calcium. Results also indicated that a species variation existed between plant tissues.

Further satisfactory experience with the modified chromic acid assay resulted in its adoption for regular use.

ENZYME PROPERTIES AND SYNTHESIS. The enzymatic diagnostic tests for the detection of liver and heart damage, which evolved as an unexpected development of studies on lactic dehydrogenase in mammalian tissues, were demonstrated to be of value in clinical laboratories.

The presence was confirmed of a virus-like agent associated with most mouse neoplasms. It was detected by its ability to cause a rapid 5- to 10-fold increase of one electrophoretically distinct form of lactic dehydrogenase (LDH) in mouse plasma. Mouse spleen, liver, erythrocytes, and four transplantable tumours contained only this type of LDH, while other tissues contained different types or mixtures of LDH forms.

Aerobic, continuously circulating digester columns, employing crushed rock as a filtering agent and inocula from soil, peat, and compost, were designed to reduce the solids in thin stillage more rapidly and efficiently than in an experimental digester tank. By this method it was found possible to reduce the total solids by 80-85 per cent within 96 hours after the initial inoculation. Microbial amylases produced by yeast and mold species from thin stillage and fortified with small amounts of malt were found to be satisfactory for alcohol production.

The optimum pH of intestinal phosphatase of pullets fed on a diet containing 1.5 per cent calcium was higher than that of pullets given a diet containing 0.6 per cent for a period of six weeks. This confirmed an earlier suggestion that variations in the mineral portion of the diet caused at least a part of the differences in pH optima of the intestinal enzyme among groups of older birds of the same age but fed different experimental diets. Quantitatively, the reaction velocity of the enzyme of intestinal mucosa of pullets fed on the high-calcium diet was about 50 per cent lower than that of birds fed on a low-calcium diet from one day to six weeks of age. High dietary manganese (150 p.p.m.) and molybdenum (500 p.p.m.) also affected the optimum pH of intestinal phosphatase, but, in contrast to dietary calcium, the shift was to lower values.

PROTEIN AND AMINO ACID STUDIES. By modifying chromatographic and electrophoretic techniques and by employing bacteria, yeasts, and molds capable of protein, fat, and carbohydrate alteration or degradation, it was possible to separate and identify 14 amino acids from wheat substrates fermented under controlled laboratory conditions. Certain yeast isolates markedly increased the total protein content of fermented wheat.

The concentration of glutamine in the blood plasma of chicks was elevated when 2 to 12 per cent of diammonium citrate was incorporated into their diet, and the concentration of glutamine generally increased to still higher levels when supplementary glutamic acid was fed. The addition of glutamic acid, up to a level of 8 per cent, to the diet had little effect on plasma glutamine levels but caused some increase in glutamic acid levels. The results supported the thesis that the formation of glutamine was a major mechanism in the chick for the removal of excess ammonia from the blood.

When chicks were fasted 12 to 48 hours the concentration of free lysine and threonine in the plasma rose markedly, reaching a maximum level in about 24 hours. The concentration of several other amino acids also rose, but to a considerably lesser extent. If the non-protein portion of the diet was fed for 24 hours, the concentrations of free amino acids in the plasma did not increase and generally were below the concentrations found in the plasma of chicks receiving the complete diet. These results indicated a profound effect of energy intake on plasma levels of amino acids and raised questions with regard to the interpretation of fasting levels.

The biological activities, ultraviolet spectra, and amino acid analyses of selected proteins irradiated with gamma rays were being examined to gain information on the changes produced in these macromolecules by ionizing radiations. Target molecular weights of various trypsin inhibitors in the purified and unpurified states were determined, and were in reasonable agreement with those obtained by physiochemical methods. The absorption spectra of a variety of pure proteins showed changes that appeared to be correlated with the quantity of certain amino acid residues (tryptophan, tyrosine, phenylalanine) in the protein.

The destruction of highly polymerized calf thymus DNA by gamma radiation was being followed by ultraviolet spectrophotometry. Marked differences were found between dry irradiation, irradiation in water solutions, and irradiation in sodium chloride solutions (0.2 - 1.0 M). Irradiation of the whole tissue, followed by isolation of the highly polymerized DNA, decreased the yield as a logarithmic function of the dose, but the portion isolated appeared unchanged.

THE HONEYBEE AND ROYAL JELLY. The addition to larval diets of either sugars or organic acids, isolated from royal jelly, altered both growth and composition of the young honeybee larvae.

Following several years of testing, a satisfactory method of transporting immature honeybees was developed. This made possible the importation from Europe of eggs, larvae, pupae, and semen of several strains of bees. These were established by artificial insemination, and a second generation was reared for testing and distribution.

The application of Fumidil-B in dust form to wintering colonies appeared to give excellent results in reducing the level of Nosema infection.

A modification in the ventilating system lowered the internal temperature of the wintering chamber and improved wintering conditions.

A method for the synthesis of 9-hydroxy-2-decenoic acid was developed. The acid did not have any effect on the behaviour of worker bees; i.e., it did not inhibit the construction of queen cells.

Further investigation of the ether-soluble neutral fraction from royal jelly led to the isolation of a compound m.p. 68-69%, whose identity remained unknown.

In order to gain some insight into the biosynthesis process leading to the production of 10-carbon acids in royal jelly, a feeding experiment using C^{14} -labelled sucrose was conducted. On this diet, worker bees produced royal jelly containing C^{14} -labelled 10-hydroxy-2-decenoic acid.

Whole royal jelly, a fraction from royal jelly (10-hydroxy-2-decenoic acid), and certain closely related dicarboxylic acids, some of which are also found in royal jelly, inhibited the development of transplantable AKR leukemia in vitro. Through the testing of a series of mono- and di-carboxylic acids, as well as other closely related compounds, the activity was shown to be associated mainly with 9- and 10-carbon straight chain monocarboxylic acids, either saturated or unsaturated. Slight variations in the structure either reduced or destroyed the activity.

MOLYBDENUM INTERRELATIONSHIPS. The weight gains of guineapigs were depressed when 500 p.p.m. of molybdenum were added to a diet containing 5-6 p.p.m. of copper. The addition of 1-2 p.p.m. of copper, as copper sulphate, appeared to overcome the depression of growth. The molybdenum content of the hair of guinea pigs increased and the copper content decreased during periods of molybdenum ingestion. Four weeks after the feeding of supplemental molybdenum was discontinued the copper content of the hair returned to normal, and the molybdenum content was partly reduced. The change in hair composition occurred in white, black, red, brown, and mixed coat-colours. The addition of 2,000 p.p.m. of inorganic sulphate did not influence these changes. The addition of molybdenum (200-2,000 p.p.m.) to the diet caused an increase in the molybdenum content of the blood, liver, and kidney of guinea pigs. The copper content of the blood and kidney increased, whereas that of the liver decreased. The addition of inorganic sulphate (2,000 p.p.m.) to the diet did not produce any consistent effect in altering these changes in composition of tissues and blood.

The addition of 500 and 1,000 p.p.m. of molybdenum to the diet of rabbits produced no change in the copper content of the hair during an 8-week period. The molybdenum content of the hair was increased by molybdenum ingestion, with or

without 20 p.p.m. of additional dietary copper.

Sprague-Dawley rats were less susceptible to molybdenum toxicity than a strain of black rats obtained from the U.S. Food and Drug Administration, Washington, D.C. The weanling black rats all died within four weeks when they were fed 450 p.p.m. of molybdenum in a simplified milk-sugar diet supplemented with vitamins and U.S.P. salt mixture XIV and containing 1.7 p.p.m. of copper. The Sprague-Dawley rats not only tolerated the molybdenum but gained about 100 grams in weight in seven weeks, as compared to an average gain of 145 grams by rats fed on the diet without added molybdenum.

Investigations of microorganisms of insects indicated INSECT MORPHOLOGY.

that aphids were remarkably sterile microbiologically.

Preliminary work indicated no difference between the general microflora of granary weevils resistant to methyl bromide and Allethrin and that of normal weevils. Adult weevils dying of DDT and lindane poisoning showed no microfloral peculiarities.

A quantitative and qualitative study of the effects of temperature on strains and species of weevils showed that higher temperatures resulted in fewer and smaller weevils and that their mycetomal microorganisms were lost.

A speciation study on the Sitophilus weevils showed that S. sasakii (Tak.) and

S. oryza (L.) were valid species.

Young weevils (Sitophilus spp.) were microbiologically (externally) cleaner than old weevils. Weevils did not produce an antibiotic material.

SOIL MICROFLORA. The following new species were recognized: Monocillium humicola, Paecilomyces variabilis, and Stachybotrys aurantea.

Detailed studies were made of species of Oidiodendron, Helicodendron, Stachybotrys, and Scalecobasidium.

BACTERIAL PHYSIOLOGY. Experiments confirmed that the sites of fixation within soybean nodules by *Rhizobium spp*, were membranes which enclosed small groups of bacteroids within the host tissue. Their presence, however, was not detected in young, effective alfalfa nodules. Cytological studies on the bacteroids of *Rhizobium meliloti* revealed swollen cells possessing electron-dense internal granules; these had not been reported previously, and their identity was not determined.

The primary effect of the antibiotic Vancomycin on *Staphylococcus* aureus appeared to be the inhibition of the production of cell wall mucopeptide. Death probably occurred by reason of the resultant malfunctioning division process, although the inhibition of nucleic acid production, which occurred at a later stage, probably was a contributing factor. The action of Vancomycin was found to be similar to that of penicillin, in that there was an interference with the synthesis of both cell wall and nucleic acid without a concomitant effect on protein production. However, in the absence of a stabilizing agent, penicillin prevented the uptake of glutamic acid by *St. aureus*, whereas Vancomycin did not.

CYTOTAXONOMIC STUDIES. Morphological and biochemical mutants were produced in 10 strains of three species of *Aspergillus*. Intrastrain and interstrain heterocaryons were established for some combinations.

It was determined that there were nine species of Dryopteris indigenous to Ontario. Of these, five were diploid, three were tetraploid, and one was hexaploid. There were no barriers to hybridization when the species grew together, so that there were 36 possible hybrid combinations, of which at least 12 were to be found in Ontario. In some localities the hybrid D intermedia \mathbf{x} D spinulosa was so prevalent as to equal the number of the parent species.

Five new chromosome number determinations were made for Ontario fern species.

PLANT PHYSIOLOGY. Lemna minor plants were exposed to equal periods of light and darkness, varying in length from 12 hours to 1/90 of a second. As the length of the light period decreased to one minute, the rate of growth decreased to half that observed at 12 hours. However, at periods of less than one minute the growth rate again increased, so that at light periods of 1/90 of a second the rate of growth was three times as fast as at light periods of one minute.

HIGH POLYMER PHYSICS. The behaviour of a butadiene-acrylonitrile copolymer was studied at the transition from the rubberlike to the glasslike state. Measurements were made of both the change of volume and stress with temperature for constant elongations, and the change of volume with temperature at constant loads.

BIOPHYSICS. Bioelectric potentials and photosynthate translocation in cucumber plants were measured using a delicate electrometer and ${\rm C}^{14}$ to label the photosynthate. Potential differences between upper and lower plant parts varied widely (100-200 mv.) with time. No consistent correlations could be found between the measured potential differences and the translocation or the other

physiological functions of growth, photosynthesis, and transpiration. A large injury potential was found whenever the measuring probes disturbed the plant cells.

Translocation studies were continued using tritium-labelled water for labelling the photosynthetic products and using a vibrating-reed electrometer and ionization chamber to measure tritium activities in plant stems.

Quantitative studies were initiated to investigate the changes in distribution of blood flow between capillaries and arterio-venous anastomoses in the rabbit ear; these occurred when the blood vessels constricted in response to adrenaline or electrical stimulation of sympathetic nerves. These changes were determined by measuring the rate of clearance of radioactive Na²² from the ear.

HUMAN POPULATION STUDIES. The data from two more regions, the Upper Highlands and the Upper St. Lawrence, were analyzed.

ECONOMICS OF FARMING

FARM MANAGEMENT. An expanded number of farm accounts, 548 in all, were analyzed by the farm management and accounting project. These accounts came from 46 counties. The analysis indicated that the average labour income of the farms in the sample was about \$500.00 higher than in 1959, about \$900.00 less than in 1958, but higher than in every other year since 1952.

Among the record-keeping farms in 1960, those classified as dairy specialty farms had substantially higher labour incomes than any other groups. These were followed by cash-crop, poultry-general, and large-hog farms, all of which had labour incomes at about the \$2,000.00 mark. The dairy-general, the steer-operations, and the beef farms on which the cows were milked all averaged close to \$1,000.00 labour income, whereas farms with beef cows not milked fell at the lower end of the scale.

A large proportion of the analysis of these records was devoted to obtaining measures of those factors that affected the profitability of alternative methods of farm organization and operation. Comparison of the performance of an individual farm business with these measures suggested the kind of changes that may be profitable for the individual farm. The extension effort based on this project was increasingly directed toward teaching farmers how to estimate or "budget" the profitability of each of these proposed changes. This estimation thus became the basis for selecting the change that would likely be most profitable for the individual farmer.

MARKETING. World production of edible vegetable oils had been increasing at about four per cent per year. Canada produced less than one per cent of the world's output. Although Canadian per capita output doubled since 1955, domestic supplies of vegetable oils accounted for only about 25 per cent of total requirements. The oil meal and oil segments of the industry were now of equal importance, with the increased use of oilseed meal in the high-protein feeds industry.

High-protein feed supplies in Canada increased from 404,989 tons in 1949 to 703,200 tons in 1960. Soybean oil meal accounted for most of this increase. Its share expanded from 132,140 tons to 404,969 tons. Canada produced only about one-third of its oilseed meal requirements. Canadian consumption of high-protein feeds per high-protein-feed-consuming animal unit increased from 24 lb. in 1949 to over 40 lb. in 1959. This rate was, however, far below that of the United States of America. Soybean production in Canada did not keep pace with the growth in domestic requirements of soybean oil and oil meal.

A study of Ontario broiler marketings and prices over the period 1953 to 1960 revealed that weekly broiler marketings increased approximately 180,000 lb. (eviscerated weight) annually and that broiler prices to growers declined at a rate of approximately 1.5 cents per lb. per year. For each 0.01 lb. increase in weekly marketings per person in Ontario, it was estimated that price declined approximately 0.4 cents.

The demand for broilers in Ontario was found to fluctuate seasonally, with the peak demand during the summer and a more limited demand during the late fall and early winter. A seasonal index of demand for broilers was constructed, indicating the percentage variations in price that might be expected from month

to month, with a constant volume of marketings throughout the year.

The published statistics on eggs were not adequate for a rigorous demand-and-supply analysis. A sample survey of egg producers in three counties indicated some serious discrepancies between these results and the published statistics for Ontario and Canada. These discrepancies may have occurred because hatching flock eggs made up a considerable volume of supply in the hatchery off-season and because the proportion of eggs passing through grading stations fluctuated from time to time, and this proportion seemed to be much higher than that indicated by the published statistics. The major finding of this study was that the information presently available was neither adequate nor sufficiently reliable to reflect those movements in demand and supply that are necessary to establish relevant economic relationship.

Data of the dairy industry in Canada for the period 1950-1960 were subjected to regression analysis. Milk production in Canada increased about 348,000,000 lb. per year; Ontario and Quebec production increased at the same rate. Per capita consumption of butter declined about 0.4 lb. per year, that of concentrated whole milk products was stable, that of skim-milk powder increased about 0.36 lb. per year, that of Cheddar cheese was stable, and that of total cheese was increased slightly. Gross farm income from dairying was increasing about \$12,000,000.00 per year in Canada; the increase in Ontario and Quebec was between \$5,000,000.00 and \$6,000,000.00 per year. Farm cash income from sales of fluid milk was increasing in Canada at about \$9,000,000.00 per year. The increase in Ontario was about \$3,500,000.00 per year, which was more than twice that of Quebec. Milk used in the production of cheese was increasing by about 33,000,000 lb. per year in Canada; the increase in Quebec was about 24,000,000 lb. per year, which was more than double that of Ontario.

A study of the storage capacity of 77 country elevators handling cash grains in Southwestern Ontario indicated that the storage capacity of these elevators increased by 1,052,000 bushels (48.4 per cent) between 1955 and 1961. The results of this study combined with the results of a previous study covering the period from 1950 to 1955 indicated that the storage capacity of country elevators in Southwestern Ontario tripled from 1950 to 1961. It was estimated that country elevator storage capacity in Southwestern Ontario was approximately equally divided between three types of business organizations: co-operatives, single-location private ownership, and multiple-location private ownership. Of these three types of organizations, the greatest expansion from 1955 to 1961 was made by co-operatives.

A study of supply control in the Ontarioflue-cured tobacco industry indicated that the high incomes from tobacco production had been largely capitalized into higher farm values. The market value of a sample of 17 tobacco farms which were sold more than three times between 1948 and 1959 increased \$4,500.00 per farm per year, an increase amounting to more than a doubling of farm values

in the 11-year period. This capitalization ultimately led to a considerable increase in cost of production. Benefits from increased land values accrued to producers only if they were owners. Analysis of acreage restrictions and bargaining procedures indicated that prices received by producers were likely to be higher as a result of restrictions, but the trend could not be proved conclusively.

PRODUCTION ECONOMICS. Formulae were developed to deal with the fact that the biological phenomena of growth, which are characteristic of agriculture's production processes, differentiated the phenomena from those of other industries. To the extent that a production period used time that could have been used by its successor, the periods competed with one another, not only for physical resources but also for time. Thus, questions such as "How heavy should I feed my hogs?" or "When should I market my broilers?" might have been answered incorrectly if considerations pertained to a single production period only. In order to maximize profit over a period of time, the optimum amount of variable input was less than that implied by the "usual" equivalence of marginal-value product and marginal-factors cost. This lower amount was because the cost of employing another unit of input had to include the foregone earning of the time required to apply that unit of input. This criterion could be further modified to allow for the possibility that the producer was eager to realize his earnings in order to finance current consumption; the formula could predict precisely the appropriate shortening of the production period in the light of such preferences.

Average costs of production for grain corn in Essex, Kent, and Lambton Counties were \$1.21 per bushel. The typical enterprise size was 28.9 acres.

Increasing returns to scale were indicated for corn enterprises in Essex, Kent, and Lambton Counties. Price elasticity of supply of corn grain was estimated to be 1.05; i.e., a one per cent increase in corn prices would be expected to bring about a 1.05 per cent increase in corn production in the following year. With the following prices – land at \$19.00 per acre per year, nitrogen at 11 cents per pound, phosphorus and potassium at 7 cents per pound, machinery at 9 per cent per dollar invested, labour at 83 cents per hour, and corn at \$1.21 per bushel – it would have been profitable, during the 1960 crop year, to expand the use of all resources, except potassium and phosphorus fertilizer, on the typical corn enterprise.

For large-scale and continuous hog production it was found that: (1) despite losses in quality it was more profitable to feed hogs a high rather than a low energy ration, because of feed and time savings resulting from the higher energy feed; (2) as hog prices increased, it was more profitable to market hogs at lighter weights and to put through more hogs per year, when housing space was limited; and (3) as the price of weanling hogs increased, it was more profitable to market hogs at heavier weights, usually at the upper weight limit for a Grade A hog.

About 884,000 cows were available for milking in Ontario in 1959, the average size of the milking herd being 13 cows. For fluid milk farms, the herd size, pasture stocking rate, and grazing methods showed marked positive association. The one-cow production function for mainly purebred Holstein cows was estimated to be W= $72\pm.0414$ Z $_1^{.55}$ Z2 $_2^{1.87}$ e-.054 Z2 where W= milk output per cow in Cwt., where Z1 was total Cwt. of T.D.N. available per cow from roughages (pasture, hay, silage, and roots), and where Z1 was total Cwt. of T.D.N. fed per cow from grain and concentrate. The general level of fixed costs per cow, as calculated by D.H.I.A. using the full herd size for the farm, tended to be constant for herds of 12 cows or more. The static supply curve, obtained from the one-cow production function shown above, indicated that the Ontario dairy industry was operating at 72 per cent of full short-run productive capacity in 1959. The dairy

industry had only 85 per cent of the cows that it could handle with available fixed resources, e.g. barn space, machinery, labour, hay, and pasture. Average marginal cost of producing milk, including a 40 per cent per Cwt. transport cost, was estimated to be \$2.70 per Cwt. The static short-run supply curve indicated a price elasticity of supply of 0.5 at a price of \$2.70 per Cwt. of milk at full capacity for the industry. Excess capacity within farms was most pronounced for cream farms, being progressively less pronounced for manufactured milk, cheese milk, and fluid milk farms.

AGRICULTURAL BUSINESS. The wide diversity of management problems facing the managers of local feed plants, dairy plants, and general farm-supply businesses was indicated by the 10 case studies prepared on finance, production, personnel, and marketing problems in these plants. In each case-report, the nature of the problem and the factors considered in deciding on a course of action were documented so that each case might be used for classroom instruction in business management.

LAND ECONOMICS. A study of land values in Norfolk, Oxford, and Perth was made to identify and measure major land-market trends. In the Norfolk land market the principal demand factor was the suitability of the soil, climate, and location for tobacco farming. Perth County buyers were attracted by better-than-average land for general farming, by good roads, by proximity to Mennonite communities, by separate schools in Ellice township, and by the prevalence of good farm markets such as creameries, livestock sales barns, and chicken processing plants. In Oxford County, buyers were attracted by a good transportation system and a ready market for dairy products. Prices of land varied greatly according to numerous local factors. In Perth, hundred acre farms varied in price from \$7,000.00 to over \$20,000.00; in Oxford the range was from \$8,000.00 to over \$25,000.00; and in Norfolk, from \$25,000.00 to over \$100,000.00.

In a study of 466 open-country residents in four sample areas in the Tweed Forest district, it was found that 33 per cent were farmers, 43 per cent non-farmers, and 24 per cent part-time farmers.

INDUSTRIAL CONCENTRATION. In order to establish the trend in the location of manufacturing industry in Ontario since the end of World War II, the extent of industrialization had to be established for each year. For this purpose, several kinds of measures of employment and added value were used, and changes in the patterns which thereby emerged were examined. The trend was toward increasing industrialization of the "horseshoe" area at the western end of Lake Ontario, with an overflow band extending from Kitchener to London. Special features included the relative decline of areas such as Windsor and Brantford, and the relative advance of Sudbury and Sault Ste. Marie. In general, manufacturing appeared less highly concentrated in Ontario in 1959 than in 1945.

WILDLIFE, INCLUDING FISH AND RANCH FUR BEARERS

DISEASE. Eighty-two deer from Manitoulin Island have been examined clinically. The intestinal helminth and protozoan fauna included little of pathological significance.

An extensive literature review of canine parasitism was completed; immune response-records by parasites of this group were rare.

Following preliminary blood studies on diseased fresh water fish from streams and ponds, a more comprehensive study was made of the blood of both diseased and healthy fish under controlled conditions in tanks and rearing ponds, in order

to attempt to establish a diagnostic table for bacterial disease of fish, based on blood composition. Improved microchemical and electrophoretic analyses of several hundred samples indicated a slight difference in the composition of blood only during the spawning season.

NUTRITION. Digestibility by dark mink of the protein in rations composed of conventional ingredients varied with the age and sex of the animals and with the protein content of the rations. The protein-digesting ability of males exceeded that of females, and it increased with age during the growing period. As protein levels increased from 22 to 37 per cent, the digestibility of protein by both sexes also increased at all ages studied.

Energy digestibility was not different in male and female mink, and was influenced only to a limited degree by age - declining in older animals receiving higher levels of protein. Increased levels of protein and of energy tended to increase the digestibility of energy, except at the highest levels of energy concentration.

Judged on the basis of kit numbers and 24-hour kit weights, the addition of 3.75 per cent of pork liver (dry matter basis) to the ration fed to dark mink during the gestation period was beneficial. No beneficial effects on lactation were observed.

The weight gains of standard dark mink, used in extensive feeding experiments involving rations with various combinations of protein and energy content, were found to be most satisfactory on rations with relatively low Calorie: protein ratios. Results indicated that the minimum ration content of gross energy, for satisfactory performance, was about 5 Calories per gram of feed dry matter. At each energy level tested, more favourable growth response was obtained with a protein level of 28 per cent or more.

Body weights of maturing dark mink kits were more reliable than live body lengths for prediction of pelt lengths.

BIOLOGICAL STUDIES. Luther Marsh supported a nesting population of about 1,000 pairs of ducks in 1961. Immigration during late summer augmented resident population to a maximum of 20,000 ducks.

Studies in the Long Point area on the productivity of marshes for breeding waterfowl revealed 84 pairs of ducks, including four species. Only nine duck broods were seen. Poor survival was attributed to severe predation by raccoons and mink. Ecological studies showed a variety and abundance of desirable foodand-cover plants. Among 96 plant species, 45 rated fair-to-excellent food for ducks. Plankton samples collected at 10 stations indicated low productivity. During the nesting season, water level fluctuations as great as 30 centimetres were recorded. Water quality tests at three stations, during July and August, showed no evidence of excessive oxygen deficit. Underwater soil samples were low in nitrate and phosphate and medium-to-low in potassium, calcium, and magnesium.

CROP AND RANGELAND DAMAGE. In the Luther Marsh area, field-feeding in grain fields by ducks occurred from mid-August to mid-November. Economic losses, however, appeared to be negligible.

Barking and browsing damage on Manitoulin Island by snowshoe hares showed a marked reduction from 1960.

FISHERIES MANAGEMENT. An analysis was completed of 65 years of fisheries management on a three-pond unit of 5.1 acres, where 65,710 speckled trout were harvested by angling. Annual harvests were stable, averaging 1,027 trout per year, and 1.7 fish per man-hour of angling. The annual per-acre harvest was 231 fish, totalling 54.2 lb.

Studies on the carrying capacity of Ontario farm ponds revealed ponds which supported native fish populations at levels exceeding 500 lb. per acre. Maximum recorded harvests of trout ranged from 70 lb. per acre in naturally reproducing ponds to over 200 lb. per acre in those stocked periodically.

Natural reproduction and growth of trout in selected farm ponds were found to be adequate to maintain the standing population of catchable fish necessary to provide a consistent quality of angling throughout the fishing season. Daily and seasonal variations in harvest levels resulted from differences in fishing intensity rather than unavailability of trout.

Preliminary studies showed that naturally reproducing rainbow-trout populations in the Great Lakes and in the tributory watersheds provided a relatively unexploited fisheries resource.

EXTENSION AND SERVICES

Along with teaching and research, extension has its place as one of the three principal functions of the College. Most members of the staff take some part in the numerous and varied extension services which are carried out regularly for the farmers and the agricultural industries of the Province. An important part of this work consists in providing information and advice to the thousands of individuals who make enquiry by letters or by visits to the College. The enquiries deal with a multitude of subjects ranging all the way from the use of fertilizers, herbicides, and insecticides to the planning of a banquet or a new barn.

Very many requests are for services provided by the College laboratories. During the year 1,401,761 chickens in 2,088 flocks and 121,368 turkeys in 126 flocks underwent blood testing; 28 Salmonella spp were isolated, 815 hatchery samples were examined, and 10,000 ml. Salmonella antigen were produced. More than 58,000 soil samples from farms, greenhouses, and residential areas were analyzed, and 8,185 samples of dairy products were tested for flavour, fat, moisture, salt, bacteria, etc. Apiary inspectors tested 44,177 colonies in 3,171 apiaries for American Foulbrood; 702 colonies were found infected and were destroyed. Daily weather records were supplied to the Guelph area, and special abstracts and summaries were supplied to several College research workers and to outside organizations. Agricultural representatives submitted 347 forage, silage, and small-grain samples to be analyzed for protein, fat, fibre, and minerals. In preparation for the 1961 Warble Fly control program, 16 schools for inspectors, council members, and spray unit operators were conducted at widely separated points in the Province; approximately 270 townships in 38 counties participated. As a service to various breed organizations and to the Ontario Livestock Branch, approximately 59,800 records, reports, and summaries were processed in the Animal Breeding laboratory through the use of punch-card equipment. From these data individual sire reports based on the type characteristic of progeny were prepared for 1,038 bulls of various breeds. Eighty-seven special chemical analyses were made in answer to enquiries accompanying the samples submitted; approximately 480 quantitative spectographic analyses were completed for various College departments and outside sources. Service programs involving the use of the Gammacell 220 gamma ray source were carried out in collaboration with the Departments of Microbiology, Horticulture, and Apiculture at the College, with the Ontario Veterinary College, and with the Connaught Laboratories of the University of Toronto.

The Horticultural Correspondence Program in 1961-62 had a total of 530 students registered, three times the enrolment for 1960-61; of these 230 took the three-year commercial course, 260 took the one-year home gardeners' course, and 40 studied special subjects. Commercial Floriculture was added to the three previous specialized sections - Parks, Nursery, and Landscape. Twenty-four new subjects were developed, making available a total of 36. As usual, an extensive series of short courses, conferences, and other meetings brought thousands of interested people into contact with the College faculty. Farm financiers, drainage contractors, rural leadership personnel, livestock producers, seed processors, and dairymen were among those availing themselves of such services.

Members of the faculty delivered addresses at hundreds of meetings in various parts of the Province. They took part in radio and TV productions, judged at fairs, shows, and public speaking contests, conducted demonstrations and field days, and assisted in other activities of farm groups. They visited thousands of farms to deal with individual problems in buildings, crops, livestock, soils, etc. They were speakers at secondary school commencement ceremonies and at career days. They prepared bulletins, circulars, and articles for the farm press. They provided a regular service of news releases and photographs to the daily press and other appropriate outlets.

The Department of Public Relations performed the function of an extension service unit and audio-visual aid centre for the Ontario Department of Agriculture as well as for the College. Thousands of photographic prints and slides were produced, as well as hundreds of feet of 16 mm. film and microfilm and hundreds of ozalid white prints. Sound films for television were produced and distributed to several TV stations. Thousands of copies of numerous circulars were printed and distributed. Programs and accommodation were arranged for the many groups visiting the campus - in all, more than 57,000 people.

MACDONALD INSTITUTE

The total attendance for the year was 270; 40 students were enrolled in the Diploma Course, and 230 in the Degree Course. Because of the greatly increased enrolment, 80 students of the second and third years had to live out of residence. As the women students had greater difficulty than the men in finding rooming houses, the need for the new women's residence is urgent.

Arrangements were concluded with the Nursery Education Association of Ontario for offering Part II of the Nursery Education Course during the summer of 1962. Research studies were being continued in textiles, clothing, foods, home management, and housing. In the Nursery School sociometric testing and data collection were systematically filed for use in parent conferences and in teaching.

The members of the faculty published articles in newspapers and magazines; one member wrote the working script for a colour motion picture in preparation for a documentary film on Macdonald Institute. The faculty answered numerous requests for information on foods, textiles, and home management. They helped with visiting groups, conferences, and short courses. They participated in the meetings of the various professional organizations to which home economists mainly belong; they were represented at two international conferences, the International Congress of Dietetics in London, England, and the Twentieth International Congress of Art History at Columbia University, New York.

Ontario Veterinary College

ONTARIO VETERINARY COLLEGE

This report covers the activities of the Ontario Veterinary College for the fiscal year, April 1, 1961 to March 31, 1962. The year 1962 marks the one hundredth anniversary of the founding of this College. Special events are planned to celebrate this and will be reported in detail in the next annual report.

A marked growth in our extension program is shown by the establishment during the past year of veterinary laboratories at New Liskeard and Brighton. As well as serving the agricultural industry in Ontario, this program indirectly stimulates our research program and provides new information for the curriculum.

ADMINISTRATION

On March 31, 1962 the faculty of the College consisted of 65 permanent, 9 temporary, and 5 part-time members. The office, technical and maintenance staff was comprised of 142 permanent, 38 temporary, and 26 casual employees.

APPOINTMENTS

New appointments during the year were B. A. Taylor, B.A., B.L.S. to the MacNabb Memorial Library as Assistant Librarian; R. A. Curtis, D.V.M. to the Department of Medicine and Surgery as Assistant Professor; R. A. Willoughby, D.V.M. to the same department as Assistant Professor; G. N. G. H. Lang, D.V. (Lyon), Cert. Bact. (Inst. Pasteur) to the Department of Pathology and Bacteriology as Assistant Professor.

RESIGNATIONS

Those who resigned during the year were: O. M. Radostits, D.V.M. from the Department of Medicine and Surgery; A. B. Rilett, B.A. from the Department of Physiological Sciences; L. M. Bridge, B. A., B.L.S. from the MacNabb Memorial Library.

DEGREES, HONOURS, AND NEW AWARDS

Dr. T. L. Jones attended the 75th anniversary ceremony of the Ecole de Medecine Veterinaire de la province de Quebec, Saint Hyacinthe, Quebec, on Saturday, September 30, 1961. During the ceremony the University of Montreal conferred on Dr. Jones the degree of Doctor of Veterinary Medicine (D.M.V.) honoris causa. He was appointed to an F.A.O./W.H.O. Expert Panel on Veterinary Education and attended a meeting in Rome, March 14 to 24, 1962.

Dr. F. J. Milne of the Department of Medicine and Surgery was awarded the degree, Doctor of Veterinary Medicine, from the University of Zurich, Switzerland; Dr. D. G. Ingram of the Department of Pathology and Bacteriology was awarded the degree, Doctor of Veterinary Science, from the University of Toronto.

COLLEGE FUNCTIONS

In 1961 there were forty-nine graduands, seven of whom had attained First Class Honours. Forty-eight of the graduands received the degree of Doctor of Veterinary Medicine at the Spring Convocation held on May 19, 1961 and one at the Fall Convocation. At the Spring Convocation the students were addressed by R. F. Farquharson, M.B.E., M.B., D.Sc., LL.D., F.R.C.P.(C)., F.A.C.P., F.R.C.P., Chairman, Medical Research Council of Canada.

The Baccalaureate Service for the 1962 graduating class was held on March

25, 1962. The sermon was given by Rev. J. Scott Leith of Humbercrest United Church, Toronto. Parents and friends of the graduating class were invited to a reception following the service.

THE STUDENT CHAPTER, AMERICAN VETERINARY MEDICAL ASSOCIATION The annual banquet of this organization was held on February 22, 1962 in Creelman Hall. The speaker was Dr. Alan C. Secord, Small Animal Practitioner, Toronto, Ontario.

The students held their annual "At Home and Open House" at the Ontario Veterinary College on Wednesday, March 7, 1962 during College Royal Week.

In keeping with the growing importance of civil defence, a series of conferences took place to discuss various aspects of this subject. Several staff members presented a number of topics and, in addition, Mr. W. G. Moon, Co-ordinator for Public Survival and Dr. B. T. Dale, M.O.H. and Chairman of the Emergency Health Organization Health Services, instructed members of faculty and students. An E.M.O. rescue truck was on display for practical demonstration.

A course for lay meat inspectors was put on at the Regional Veterinary Laboratory, Kemptville, in co-operation with officers of the Health of Animals Division, Canada Department of Agriculture.

THE SCHOOL OF GRADUATE STUDIES

During the academic year 1961-62 there were 15 students registered in the School of Graduate Studies, University of Toronto, to complete degree requirements in various departments at the Ontario Veterinary College.

At the University Convocation held on Friday, June 2, 1961 the degree, Master of Veterinary Science, was conferred on five students. At the Fall Convocation in November 1961 one student received the degree of Doctor of Veterinary Science.

COLLEGE FACILITIES

Towards the end of this fiscal year, arrangements were being concluded for a much needed building to provide quarters for (1) diagnostic services and research in poultry diseases, (2) virology, and (3) a study of the wild life reservoirs of diseases occurring in animals of economic importance. It is expected that this building will be constructed in 1962.

Preliminary planning has occurred on a building to be known as Alumni Hall. The O.V.C. Alumni Association expects to reach its objective of \$100,000 in a campaign to provide funds to help pay for this building. Alumni Hall will house senior students and graduate students and it is expected that a worthwhile teaching program will be organized in these new facilities. The contribution of the Alumni Association is a gift in celebration of the centennial of the College in 1962.

Horticultural Experiment Stations

This report deals with the two Horticultural Stations, Vineland and Simcoe. Because of its recent acquisition (June, 1960), there are few research results at Simcoe at this time. However, vegetable varieties and selections are being compared, a peach orchard for nutrition and irrigation studies has been planted, strawberry variety tests and nutrition experiments are underway. An implement shed and workshop is nearly completed. A farm foreman and one farm hand are the only permanent employees at the Simcoe Station at present. A first twilight meeting for growers was held on August 8, 1961.

At Vineland, 5 twilight meetings were held -- 2 for early tomatoes, 2 for early peaches, and 1 for soil fumigation experiments. Members of the staff addressed 72 meetings with a total attendance of nearly 8,000 persons. The demand for true-to-name propagating material from the Station is growing. In 1961 the following numbers were given out -- plants, trees, 568; élite strawberry plants, 5,576; buds, scions, cuttings, 200,924; vegetable seeds, 278 packets + 2-1/4 lb.; vegetable divisions, 345.

Collections of ornamental materials are being built up at Vineland. There are now on the grounds 185 and 245 species of deciduous and evergreen trees and shrubs respectively. In addition there are extensive variety collections of rose, iris, peony, lily, and gladiolus.

Given below are brief notes on some of the research projects.

CHEMICAL WEED CONTROL IN THE VINEYARD

The conventional way of killing weeds in the grape row is by the use of a grape hoe. This implement always does a certain amount of root damage. Chemicals are now available which do a reasonably satisfactory job of weed elimination with no or little injury to the roots of the vine. Plots sprayed with monuron for 3 years, and diuron for 4 years, had a slightly better yield than the grape-hoed plots and appear to be increasing their lead. This shows that there is no ill effect from repeated applications. Dalapon is useful for spot treatment of grassy areas. It is superior to diuron for grass control.

GROWERS' PACKS OF GRAPES

Over a 5-year period, 1957-1961, 2-basket samples of grapes were collected by the Ontario fruit and vegetable inspectors and brought to the Station for detailed examination at 1 and 4 days after purchase. The records included net weight of fruit, number of bunches, weight of 100 berries, shelling, splitting, decay, red berries, berry moth, soluble solids, and a general rating of the sample.

Results indicate that the net weight of a flat 6-quart basket should be between 7 and 7-3/4 pounds, and for a heaped 6-quart basket, a minimum of 8-1/2 pounds. Baskets which were rated good or better had less than 5% of shelling and 5% of splitting. Only 7 and 6% of the Fredonia and Concord packs at the one-day examination had more than 1% of decayed berries so it appears that this maximum (1%) would be a satisfactory guide for inspectors. Many samples of grapes were immature as measured by the refractometer, i.e., total solids in the juice, largely sugars. To be acceptable to the consumers, the ratings indicate that there should be a requirement of 13-1/2% soluble solids. As an indication of the need for better maturity, it should be pointed out that in the 5-year period 48% of the Fredonia samples and 18% of the Concord samples were below this level.

SALES OF FRUIT IN CONSUMER-UNITS ON TERMINAL MARKET

In 1960, a light-crop year, packages of peaches smaller than the 6-quart basket brought a premium on the pound-basis on Toronto Terminal Market. The question was raised as to whether this would also hold good for a heavy-crop year. Fortunately, 1961 was just that. Again there was a premium over and above added costs for the various small packages. On September 10 for instance, the net returns per pound for the various units were: 6-quart (2 layer), 4.3 cents; box of 9 fruits, 6.7 cents; box of 12, 7.6 cents; tube of 5, 9.6 cents. At the same date a half-bushel of peaches, 2-3/4 inches and up, gave net returns of 6.2 cents per pound. The 6-quart baskets were the smallest-sized peaches, 2-1/8 to 2-3/8 inches, but they sold for the same price as larger peaches in this container. Noteworthy was the fact that the small units held their price level better throughout the season than did the standard 6-quart basket. Based on limited sales of apples and pears, there were indications that a 2-quart container brought a higher net return per pound than the 6-quart basket.

FUMIGATION OF FRUIT-TREE NURSERY SOILS WITH NEMATOCIDES

For several years fruit budding stocks, particularly stone-fruit types, had been growing very poorly. Sometimes growth was so poor that budding was impossible in the year of planting or the take of buds was unsatisfactory. Examination of the soil and the roots showed a very high population of root lesion and pin nematodes. Beginning in the fall of 1958 various fumigants were applied according to recommendations for control of these nematodes. The increase in stand of rootstocks, the take of buds, and the growth of the budlings was very much improved with all of the fruits. It appears that it will be necessary to fumigate this nursery soil every year before planting budding stocks. Some of the fumigants have added value in their control of weeds.

RHUBARB REST PERIOD

It is generally known that rhubarb cannot be successfully forced for winter sales until the crowns have had a period of low temperature in the fall. Crowns of 2 varieties were dug and then stored at 38° F. for weekly periods of 1 to 9 weeks. The crowns which were in cold storage for 4 weeks or less grew very weakly. Storage for 5 weeks resulted in an appreciable improvement in growth of stalks at $50\text{-}55^{\circ}$ F. but maximum growth appeared to be after 8 weeks of storage at 38° F.

RELATION BETWEEN SEEDLING VIGOUR AND TREE SIZE IN A SWEET-CHERRY POPULATION

Sister seedlings, 259 in number, were graded into 5 height-classes at one year. They were planted in the nursery as separate lots. At 3 years of age, trunk measurements were taken and they were planted in the orchard. At 8 and 10 years of age, trunk measurements were taken again. There was no correlation between size at one year and size at any of the other periods. It appears to be therefore unwise to discard the small seedlings at one year. There was, however, a high positive correlation between the size at 3 years and at both 8 and 10 years. If orchard space is limited therefore, the discarding of the weaker seedlings at time of orchard planting is justified. A high proportion of deaths among the seedlings occurred in the low-vigour groups.

VEEPORT GRAPE

This is the first grape selection to be named by the Station. It is from a cross between Wilder (blue) and Winchell (white). Veeport is blue in colour and ripens a few days before Concord. It is recommended only for wine purposes, not for the basket trade. Wine made from this variety lacks the labrusca flavour that is objectionable to some consumers. It has a slight muscat flavour but is generally described as being fruity. The bunches and berries are similar in size to Concord, sugar is slightly lower and acid, a little higher. Approximately 30 acres of this variety are already planted and probably the acreage will be doubled by 1962 plantings.

SWEET POTATO PRODUCTION IN SOUTHERN ONTARIO

Various old and new varieties of sweet potatoes have been under test at Vineland and Simcoe for 9 years. Some of the newer ones are markedly superior in yield and quality to the older ones. This raises hopes that this crop can now be grown profitably on some of lighter soils in Southern Ontario. Of the varieties under test, Kandee is rated as the best but other promising ones are Earlysweet, Jersey Orange, Tango, and Virginian. Mulching the sweet potato plants with black polyethylene film increased the total yield from 29 to 65 per cent in the years 1959-61. In addition, there was a higher percentage of No. 1 roots, improved root shape, and better flesh colour.

LEAF ANALYSIS SERVICE

Previous to 1961, growers' leaf samples of apple, peach, and grape were analyzed as an index offertilizer need. In 1961, pears and sour cherries were added to the list. Altogether, 559 samples were received for analysis -- apple, 270; peach, 82; grape, 86; pear, 55; sour cherry, 66. The Fruit and Vegetable Extension Specialists collect the samples and pertinent information concerning the orchard, also \$5 per sample, and send all to the Experiment Station. By the end of the year, reports are sent to growers and to the extension men. These reports are used as a guide in buying fertilizer for the following year.

THE HORTICULTURAL PRODUCTS LABORATORY

The work of the Horticultural Products Laboratory is organized in 5 divisions: 1) microbiology, 2) wine making, 3) juices, concentrates, and chemical analyses of fruits and fruit products, 4) use of refrigeration in the preservation of raw fruit and vegetables, and 5) testing new varieties of fruits (and some vegetables) by canning, freezing, and secondary products.

The present staff is 10 persons, but this will increase to 11 when a study begins in 1962 on the physical aspects of the preservation of fruit.

When a study has advanced sufficiently to be considered useful, the accumulated information is published in the Annual Report. The 1961 Report will contain papers on the following subjects:1)Commercial use of stored, frozen yeasts, 2)Tests of new varieties of grape as wines, 3) A summary of the results of 11 years' testing of varieties of apricot, cherry, raspberry, and strawberry when canned, frozen, and made into secondary products such as ice-cream, pie, and jam.

Kemptville Agricultural School

The following covers the activities of the Kemptville Agricultural School for the fiscal year April, 1961 to March 31, 1962.

The most important function of the School has been to provide instruction in Agriculture and Home Economics for the students enrolled in the various courses. All staff members have been involved in extension work by providing extension specialist's services in agriculture within the area served by the School. Demonstration and research projects have been expanded to meet the needs of specialized and mechanized agricultural production. Course content has been changed somewhat to meet the needs of present day students in agriculture who have much more advanced academic training than was the case a decade ago.

Enrolment continued to increase at a steady pace with 40% of the junior year in agriculture having the equivalent of grade 12 or better.

Agriculture - 2 year course: Juniors 61	1				
Seniors 43	3				
Advanced course - Agricultural Mechanics					
Home Economics: Juniors 2					
Seniors 11	1				
Dairy Course: 3 months	1				
3 weeks	1				

Sixty-two students received their graduation diplomas in agriculture and home economics on June 3, 1961. Seventeen dairy students received their diplomas by mail having successfully completed the courses in dairy manufacturing.

Student organizations on the campus carried out a full scale program of activities throughout the year, initiating projects for the participation of all students.

Fifty-six groups of people and organizations interested in agriculture and rural living used the facilities of the School for meetings, conferences and demonstrations during the year. Seven thousand, six hundred and seventy-two persons attended these functions with over two thousand occasional visitors to the campus and farm.

The Regional Veterinary Laboratory located on the campus provided valuable assistance with instruction for the students in animal health and bacteriology as well as veterinary service for the school herds and flocks. Appreciation is also expressed to the Ontario Department of Lands and Forests for the provision of instruction in forestry by the local Zone Forester.

Thirty-six organizations and individuals contributed in excess of \$7,000. in bursaries, scholarships and prizes for students enrolled at the School. These have been of very great assistance and encouragement to the young people who have taken advantage of the opportunity to enroll as students.

The reports of the several divisions which follow give a more detailed outline of the activities of each, as related to teaching, extension and research.

AGRICULTURAL MECHANICS DIVISION

The work of this Division consists of lecturing, agricultural engineering extension, and research. Lectures and instruction in agricultural engineering subjects are given to the junior and senior students in agriculture and to the advanced course in agricultural mechanics.

The following subjects were taught during the school term:

Drainage, mechanics, farm water supply and sewage disposal, electricity, refrigeration, hydraulics, instrumentation, materials handling, use of explosives, metallurgy, forging, tinsmithing, welding, plumbing, farm machinery, motor mechanics, woodworking, farm buildings, rope work, care and sharpening of tools, the care and operation of earth moving machinery and machine shop practice.

The students in the advanced course - agricultural mechanics were taken on a number of field trips. These included the Canada Farm and Industrial Equipment Trade Show in Toronto and visits to prominent farms in Eastern Ontario to inspect drainage, buildings, liquid manure systems, use of electricity on the farm and farm management practices.

This Division is also indebted to the following for placing machinery on consignment at the School for use in classes and demonstrations: Massey-Ferguson Company Limited, International Harvester Company Limited, Cockshutt Plow Company Limited, Allis-Chalmers Company Limited, J. I. Case Company Limited, Oliver Plow Company Limited, Beatty Bros., Morris Motors (Canada) Limited, Niagara Brand Spray Company, Spramotor Limited, Empire Brass Company Limited, Sass Manufacturing Company, F. E. Meyers Company Limited, DeLaval Company Limited and Ketchum Manufacturing Company.

EXTENSION AND FIELD WORK

This Division did the engineering extension work in the eleven eastern counties of Ontario. The extension and field work consisted chiefly of drainage service, building service, 4-H tractor clubs, agricultural night classes and meetings.

Under drainage service 469 farmers were called on and received drainage assistance. Blueprints for 211,465 feet of profile and contoured systematic drainage plans for 3,226 acres of land were surveyed and blueprints prepared for farmers in Eastern Ontario. Thirty-one tile drainage installations were inspected. During the year this Division co-operated with the agricultural representatives in planning and conducting 28 drainage field days.

Under building service 408 farmers were called on and given assistance and advice on ventilating stables and constructing new or remodelling farm buildings. Forty-one extensive building or remodelling jobs for which plans had been prepared were completed and 61 other building projects for which plans were made are in the process of being completed. Fifty-seven advisory ventilation calls were made. Approximately 300 prints of farm building plans from the Canadian Farm Building Plan Service were distributed.

Other engineering extension included surveying and advising on the layout

and installation of septic tank and sewage disposal systems. Ten farmers used the septic tank forms from this Division to construct septic tanks. Advice was also given on the installation of water systems; drilling and care of wells; the layout, construction and equipping of bathrooms; planning and checking electric wiring installations; and assistance in adjusting and repairing farm machinery.

Six staff members of this Division instructed and supervised fifteen 4-H tractor clubs with a total of 222 members. Meetings of the tractor clubs were attended, with coaching classes and 15 achievement days conducted, and check visits made to the members at their homes.

During the winter months this Division co-operated with the Extension Branch of the Ontario Department of Agriculture, in supplying an instructor at 2 night classes conducted at Elgin and Alexandria on the subject of welding. The attendance at each class ranged from 12 to 16.

During the year speakers were supplied for a number of farm meetings which included breed association barn meetings, county spray schools, council meetings, ditch meetings, and Junior Farmer Association meetings. These meetings were addressed on stable ventilation, bulk milk handling equipment, misuse of electric wiring systems, drainage, safety on the farm, farm buildings, and other engineering subjects. All staff members called on and interviewed prospective students and their parents in their respective areas.

RESEARCH

1. Farm-made Ventilation Fans

Ontario Department of Agriculture Circular #250 dated May, 1955 was published and contains the findings arrived at by this Division.

2. Use of Soil Heating Cable for Supplemental Brooding

The object of this project was to determine if it was practical to use soil heating cable as a source of heat for supplemental brooding of chicks.

A brooder house was adapted to the test. Soil heating cable was installed in the floor and tested for effectiveness in brooding young chicks and the cost per chick. This source of heat was found effective for brooding but statistical analysis showed that the equipment and power costs were high. It was not considered practical.

3. Emergency Electricity

Power failures cause awkward situations on most farms. Farmers realize the need for some standby source of power to operate their modern equipment. Commercial standby generating units of several kilowatts capacity are expensive and are useful if the failure is of long duration. However, most failures are not of this type. There was a need for a small, inexpensive generating unit that could be used for an emergency of short duration.

All available literature on the subject was reviewed. A small, inexpensive generating unit was then built and tested. A 6 volt heavy-duty ball bearing truck generator was rewound to give 6-1/2 amps at 115 volts, AC current, or roughly 750 watts at full load. A 1-1/2 H.P. gasoline engine from a lawnmower was used for power. This little generating plant worked very efficiently and can be very useful on a modern farm.

The results of this project are published in Ontario Department of Agriculture Publication #30 dated August, 1960, and also in the Family Herald May 4th, and May 11th, 1961.

4. Supplemental Heat

Enquiries from farmers indicated there was a great interest and a need for a publication on supplemental heat on the farm. The literature and commercial equipment available were reviewed.

A manuscript was prepared bringing up to date the equipment available and how it can be used to advantage on the modern farm. This manuscript has been submitted to The Department of Engineering Science, Ontario Agricultural College, Guelph, and is now awaiting approval for publication.

5. Does Tile Drainage Pay? (Eastern Ontario)

Ontario Department of Agriculture Publication #3, dated 1961.

This publication is the result of a six year study, 1955-1960, on the effect of tile drainage in Eastern Ontario. It was prepared by the Farm Economics and Statistics Branch and the Kemptville Agricultural School.

The Agricultural Mechanics Division acted as collaborator in this study and publication. In the initiation of this project this Division supplied the information re tile drained fields which could be selected for comparison with fields not tile drained.

6. Cover Materials for Tile Drains

The Agricultural Mechanics Division is co-operating with the Department of Engineering Science, Ontario Agricultural College, in conducting a study into the effectiveness of cover materials to decrease silting of tile drains. This field experiment was started in 1960.

The experimental tile installation consists of 18 lines of drains 400 feet long of which 3 are checks (blinding with top soil), 3 are blinded with straw, 3 have tar paper above the drains, 3 have tileguard above and below the drains, 3 have tileguard above and duromat below the drains, 3 drains are no-co-rode perforated pipe. No results from this study have been published as yet.

ANIMAL HUSBANDRY DIVISION

The staff of the Division is responsible for the lecture and laboratory work in animal husbandry. In addition to this, members of the staff coached a team of four senior students which placed second in the Inter-School Judging Competition at the Royal Winter Fair, and arranged for the senior students to visit outstanding farmers to study their farming operations. This Division is also responsible for the supervision of the farm and experimental work undertaken pertaining to livestock, as well as supervision of the Advanced Registry Test Station at Kemptville which is under the direction of the Ontario Advanced Registry Board for beef cattle. Some demonstration and experimental work was carried out on the farm as follows:

GREEN FEEDING

Green feed was cut and drawn to the dairy herd in August, comparing yield and palatability of green corn, sudax, oats and sudan grass combined, and a high sugar corn. The crops were in the following order, both as to yield per acre and palatability, high sugar corn, green corn, sudax and combination of sudan grass and oats.

ANNUAL PASTURE

Sudax and a combination of oats and sudan grass was compared as pasture for beef cattle. The sudax yielded a much greater tonnage of pasture and there

was much faster recovery after being pastured with the sudax. Sudax was eaten very readily by the cattle.

HAY

A self-propelled windrower with hay conditioner was compared to the mower and conditioner in the curing time for hay. To date it would appear that windrowing and conditioning does not speedup drying time. In tests last season, 1961, unconditioned hay in swath dried slightly faster than windrowed and conditioned hay.

The combination of mower and conditioner still proved to give best quality hay even in the rainy season of 1961.

FLY CONTROL

Again, through the co-operation of a number of chemical companies, a number of chemicals were compared for the control of flies with particular emphasis on the face fly. Products tested included Dimethoate, DDVP, Toxaphene, as well as commercial products which used such products as Methoxychlor or Pyrethrins and Synergists (piplronyl butoxide) as the killing agent.

Toxaphene was used in oil base in commercial back rubbers (horizontal) for beef cattle and on dry dairy heifers for all types of flies. There were always a few face flies on the cattle, but the irritation around the eyes was practically eliminated.

Dimethoate and DDVP in a syrup and water mixture appeared very promising and will be continued in 1962 for face control.

The commercial products with Pyrethrins were very effective.

Malathion, Diazinon and Dibrorn were used in barns. Malathion still gives the most effective control with the lowest cost. Dibrorn is very effective with frequent applications as residual effect is not as lasting as Malathion.

LIVESTOCK

Eight Shorthorn calves were divided into two groups - three steers and one heifer in each group "A" and "B".

Group "A" were fed a grain ration in pellet form and hay free choice. Group "B" received the entire ration in pellet form. For the first period - hay and grain in equal parts, the second period - one-third hay and two-thirds grain. The grain mixture was the same for both groups.

The purpose of the experiment was to ascertain if market cattle could be raised more economically to proper finish on a high roughage ration. The experiment will not be completed until about June 15th at which time dressing percentage, carcass grade, and eye of loin will be assessed, as well as feed efficiency.

DAIRY HERD

Milk composition studies are being made with the K.A.S. dairy herd in co-operation with the Dairy Division.

Milk is tested monthly, at time of butter fat test conducted by the Record of Performance inspector, for solids-not-fat and protein by the staff of the Animal Husbandry Division, with equipment supplied by the Dairy Division.

The effect of such factors on milk composition as estrus, stage of lactation, breed, age of cow, morning versus evening milk, are included in the study.

ADVANCED REGISTRY BULL TEST

A total of 27 beef bulls were on test during the year for both daily gain while on test and average lifetime gain. Fifteen bulls made the required gain on tests with average daily gains of 2.7 lbs. per day, but six of these failed to make the required lifetime gain.

THE DAIRY HERD

The following is a summary of the production records completed by the herd during the year with all records on 305 days.

Herd Average

Breed	No. Completing Test	Lbs. Milk	Lbs. Fat	Average Test
Holstein	19	14,116	581	4.12
Ayrshire	5	9,610	391	4.05
Jersey	5	7,830	424	5.28
Herd Index	Milk	Fat		
Holstein	127	146		
Ayrshire	132	131		
Jersey	115	115		

EXTENSION

Considerable time was spent during the year on extension work. The following is a summary of the meetings attended.

Meetings addressed	35
Fairs, achievement days and judging competition	18
Meetings as committee member	20
Groups visiting farm only	10

Assistance was given in the following ways:

- 1. Secretary, Ottawa Valley Sheep Breeders' Association.
- 2. Secretary, Eastern Ontario Yorkshire Breeders' Association.
- 3. Director and member of executive, Ottawa Winter Fair, and chairman of the Swine Committee.
- 4. Member of the Sheep and Swine Committee of the Central Canada Exhibition Association.
- 5. Member of Sale Committee, Ottawa Winter Fair.
- 6. Member of the Junior Committee of the Ottawa Winter Fair.
- 7. Member of the Ayrshire Bull Buying Committee for the Eastern Ontario Cattle Breeding Association.
- 8. Member of the Committee of the Eastern Ontario Soil and Crop Improvement Associations.
- 9. Numerous requests for information on livestock and livestock feeding were answered by letter and office calls.
- 10. Visited prospective students in the County of Glengarry.

CHEMISTRY AND SOILS DIVISION

The activities of this Division are summarized under the following headings:

1. Lectures and Laboratory Classes to Regular Students

Lectures in chemistry, soils, fertilizers and mathematics were given to the junior and senior classes in agriculture. Soils and farm planning to the advanced course in agricultural mechanics, and inorganic and organic chemistry to the junior and senior classes in home economics. Laboratory periods in chemistry, soils and fertilizers are given in conjunction with the lecture classes.

2. Extension

- (a) During the calendar year a total of 4,472 samples of soil were received for analysis. These samples were sent to the Soil Testing Laboratory, Department of Soil Science, Ontario Agricultural College, Guelph, where the analysis were carried out and the results returned to this office for fertility recommendations. Reports covering the recommendations for fertilizer use, agricultural limestone requirements and culturalhyractices were sent out to the farmers, with duplicate copies of the recommendations to the respective Agricultural Representatives. During the past year four Agricultural Representatives from Eastern Ontario were given instruction on making fertility recommendations from soil analysis, and are presently making fertility recommendations for their respective counties.
- (b) During the year 41 meetings were attended, discussing problems related to the soils, lime and fertilizer use. Personnel from this Division visited nine secondary schools, outlining the course of study that is presently being offered by the Kemptville Agricultural School. Representation from this Division was also included on several Provincial Advisory Committees that held meetings throughout this past fiscal year.

3. Demonstrational and Experimental Field Work

(a) During this past year, fertilizer trials were established on farm fields, to further evaluate the accuracy of soil test calibration data on farm fields. Due to the extremely high incidence of lodging on spring grain, some difficulty was encountered in obtaining reliable yield data.

The results indicated that fertilizer recommended for spring grain at the 95 per cent level, by soil test, gave the highest yield on all locations. A significant yield response was also obtained at the 90 per cent level, which approximates the general recommendation. The results also indicated a definite response from higher rates of nitrogen on spring grain. However, when nitrogen was used alone, at rates exceeding 40 lbs. per acre of nitrogen, a noticeable decrease in yield was noted.

- (b) Comparative tests using a complete fertilizer with Urea and ammonium nitrate on grass and legume pasture have been continued over the past few years, and although no marked difference in response of these two carriers was noted when equal amounts of nitrogen per acre were applied, a definite increase over the check plots was noted.
- (c) During the past summer, a study was made in co-operation with the Division of Horticulture, to compare the results obtained from soil test

with those obtained from leaf analysis in determining the nutritional requirements of apple trees in Eastern Ontario. For this study, soil samples and leaf samples were obtained from 32 different orchards. From the results obtained it was felt that due to the rooting characteristics of apple trees and their feeding zone, that the soil test could act as a guide, but for a more specific evaluation of the nutritional needs of an apple tree a leaf analysis should be obtained.

DAIRY DIVISION

Registration in the three month dairy course from January 2nd to March 29th, 1962 was 31, the largest number since 1950. In future, those enrolling in this course will be required either to have completed Grade X in high school or pass a qualifying examination to enter the course.

A one week's course for bulk tank milk graders was presented to 14 men during September, 1961.

One-day conferences were arranged for the cheesemakers of Eastern Ontario, and for the Eastern Ontario Association of Milk Sanitarians, during April, 1961, with good attendance at both conferences.

The usual courses in dairying and micro-biology were given to senior and junior students in agriculture.

IMPROVEMENTS IN THE DAIRY BUILDING AND ITS EQUIPMENT

The students' common room was painted by the K.A.S. Maintenance Division, and new blinds have been installed throughout most of the building. Three fire hoses were also installed.

New items of equipment acquired included two office desks, a circulatingtype wash sink, a refrigerated milk dispenser, a stainless steel cottage cheese vat and a milk cryoscope, the latter being a special instrument to measure the freezing point of milk accurately and thus detect watering.

EXTENSION

In addition to the two conferences mentioned above, a number of meetings were addressed by staff members. Some of these were arranged by the Dairy Branch or by the Department of Dairy Science, Ontario Agricultural College. Assistance was given in a number of county Dairy Princess competitions.

RESEARCH

The following projects were dealt with during the period under review: No. K.D. '61-I The relationship of moisture, salt, pH and non-lactic bacteria counts to the development of flavour defects in Cheddar Cheese.

Over 1200 vats of cheese, representing approximately every tenth vat of cheese graded at Eastern Ontario grading stations, were examined. Moisture and salt were not found to be out of line in off-flavoured cheese, but pH values were often above normal. Bacteria counts averaged two to three times higher on defective cheese than on most first grade samples. These results have been reported to cheesemakers' and cheese producers' meetings, and a final report will be presented when the 1961 cheese are all regraded.

No. K.D. '61-II Development of a suitable method for enumerating the non-lactic bacterial population in cheese.

It was found that by adding 3.75 p.p.m. of brom-cresol-purple to a commonly used plating medium, Plate Count Agar, that lactic acid organisms could be sufficiently inhibited to permit enumeration of other organisms present in cheese in routine testing. This method was used to advantage in project K.D. '61-I.

No. K.D. and K.L. '61-III Variations in the composition of milk from the K.A.S. herd as revealed by the Golding Plastic Beadtest for solids-not-fat and the Amido Black test for protein.

(This project is a joint one between the Dairy and Animal Husbandry Divisions.) Data are being collected over at least a two-year period based on the same samples as are tested for butterfat by the R.O.P. inspectors.

LABORATORY AND OTHER SERVICES PROVIDED

Lactic cultures were once again furnished to cheese factories and dairies, 325 requests being filled during the year.

The following is a summary of other laboratory tests made here as a result of requests from milk producers and dairy plant operators:

Milk: 507 butterfat tests, 128 standard plate counts, 102 resazurin, 86

flavour, 2 antibiotic tests, 92 Whiteside examinations, 25 micro-

scopic analysis, 19 Coliform counts.

Cream: 7 butterfat tests, 11 yeast and mould counts, 6 standard plate

counts.

Butter: 55 yeast and mould counts, 8 flavour examinations, 10 salt, 15

standard plate counts.

Cheese: 3 bacterial count, 3 salt content.

Water: 3 standard plate counts, 3 Coliform counts, 1 hardness.

Miscellaneous: 28 samples.

The article "A Preliminary Report of Tests Conducted on Eastern Ontario Cheese in 1961 with a View to Learning the Causes of Flavour Defects" was published during the year. This appeared in the Report of the 29th Annual Meeting of the Ontario Cheese Producers' Association, Toronto, 1962.

ENGLISH AND ECONOMICS DIVISION

This division co-ordinated visits of 792 high school students and staff to K.A.S. in May to become acquainted with facilities here.

Preparation of exhibits for Central Canada Exhibition and Ottawa Winter Fair, advertising copy for radio and press, brochures, calendar publication, details of scholarships, bursaries and awards, graduation preparations, tape recordings for the Ontario Farm Radio Service and other radio outlets, regular press and radio releases, and secretarial duties for several staff committees constitute some of the public relations and administrative duties assigned to this Division.

Extra-curricular activities included supervision of the student newspaper, yearbook production, public speaking competition, choral and variety concerts, student counselling, regular Literary Society programs and judging of Ontario Junior Farmer public speaking finals in Toronto.

The K.A.S. library is also operated by this division demanding continuous

cataloguing and service to staff and students.

TEACHING

The addition of a new staff member in January gave opportunity for instruction in farm management to the Advanced Course-Agricultural Mechanics and increased instruction to second year diploma students in this subject. This also permitted intensified instruction in farm accounting projects and marketing by the other instructor in economics.

Students in Agriculture and Home Economics were taught regular courses in English, public speaking, civics and rural leadership as well as a course in public relations for the Advanced Course-Agricultural Mechanics.

EXTENSION

Speeches were made to junior and senior farm organizations throughout Eastern Ontario. County farm management associations secured assistance from this Division particularly in accounting and budgeting. The solution of individual farm problems was undertaken also in co-operation with the agricultural representatives.

RESEARCH

The tile drainage profitability study undertaken in co-operation with the Ontario Farm Economics and Statistics Branch in 1955 was concluded. The results appear in Publication No. 3 (1961)"Does Tile Drainage Pay?" (Eastern Ontario).

The addition of a farm management specialist to the staff of the Division will now make research projects possible in this field.

FIELD HUSBANDRY DIVISION

In addition to teaching the courses in field husbandry and in weeds, outlined in the K.A.S. calendar, the staff were actively engaged in extension and experimental work.

SUMMARY OF EXTENSION WORK

Farm and other agricultural organizations were addressed on 39 occasions. These included annual meetings and summer twilight meetings of several County Soil and Crop Improvement Associations and Livestock Breed Associations, seed fairs, field days, barn meetings, night schools, conferences and conventions. The Head of the Division represented the Ontario Department of Agriculture on a tour, organized by the Canadian Seed Growers' Association, of plant breeding and research stations in Europe and Great Britain during July. Seed growing, processing, and testing has reached a high state of specialization in the countries visited.

Assisted in planning the program and instaging the Annual Crop Improvement Conference and the Weed Control Conference at the Kemptville Agricultural School.

Judged at seed fairs including the Ottawa Valley Seed Fair and the Royal Winter Fair. Also served as one of the judges in the finals of the Ontario Pasture Competition.

Served on several committees including: The Eastern Section of the National Weed Committee; Secretary of the Eastern Ontario Soil and Crop Improvement Committee; Ontario Advisory Committee on Herbicides; Seed Committee of the Royal Winter Fair; the Ontario Corn Committee; the Ontario Committee on Field Crop Recommendations; and the Federal-Provincial Committee on Developmental Research in Agriculture.

Considerable time was required in answering numerous requests for advice and information on crop production and weed control problems by correspondence,

telephone, office calls and personal visits.

Several radio and TV broadcasts were prepared and recorded for the Ontario Department of Agriculture Radio Service and local radio stations in Eastern Ontario. Assistance was provided in the preparation of circulars and bulletins.

EXPERIMENTAL WORK IN FIELD HUSBANDRY

In order to co-ordinate the experimental work undertaken at the K.A.S. with that being done at other Experimental Stations in the Province, it has been necessary to serve on several committees. This committee work required 22 days in attendance at meetings and an equal amount of time to assemble and prepare experimental data.

Because of the limited facilities and equipment available to the Field Husband-ry Division at the Kemptville Agricultural School, it has been necessary to rely on the excellent co-operation and assistance received from the Ontario Agricultural College and the Central Experimental Farm in processing much of the material and data from the tests.

The following statistics will give some indication of the nature and scope of the experimental work underway in the Division:

825 plots in 14 tests of cereal grain varieties.

120 plots in 2 tests of soybeans and white bean varieties.

535 plots in 4 tests of corn hybrids.

72 plots in 2 tests of alfalfa varieties.

28 plots in 1 test of birdsfoot trefoil varieties.

116 plots in 2 tests of grass varieties.

252 plots in 5 tests of hay-pasture mixtures.

Results from the foregoing variety and mixture tests were used in making the recommendations for Zones 4 and 5 in Circular No. 296, "1962 Field Crop Recommendations for Ontario". These data are also used in supporting the licensing of new varieties and hybrids.

In addition to the crop testing program at the K.A.S., seed of both 'recommended' and 'promising' varieties is assembled for outside tests of grain corn, silage corn, oats and barley. These plots are sampled, yields calculated and data supplied to County Soil and Crop Improvement Associations. In order to focus attention on the use of earlier maturing hybrids for high quality corn silage, 28 tests were conducted in the 14 Counties of Eastern Chario to compare an early, medium and late maturing hybrid with the following results:

Hybrid	Percent Moisture at Harvest				Yield per Acre (tons) Green Weight Dry Weight					
	1959	1960	1961	1959	1960	1961	1959	1960	1961	Ave.
Early	68.7	77.7	73.9	16.6	16.1	17.0	5.09	3.6	4.4	4.4
Medium	73.7	80.7	77.7	19.4	17.8	19.5	4.9	3.4	4.3	4.2
Late	76.8	82.2	80.3	21.5	18.3	21.2	4.9	3.2	4.2	4.1

The following data are the averages of the yields obtained in the various tests conducted on the Kemptville Station in 1961:

Bus. Per Acre

3.29

2.65

Oats (high fertility)	64.1
Oats (medium fertility)	62.6
Barley (tests abandoned due to extrem	ne lodging)
Winter Wheat	67.9
Grain Corn	91.6
White Beans	43.3
Soybeans	43.0
Forage Crops Silage Corn	Tons of Dry Matter Per Acre 5.09
Alfalfa varieties (5th year)	2.39
Birdsfoot Trefoil (5th year)	3.32
Orchard Grass varieties (2nd year)	2.50

HOME ECONOMICS DIVISION

Hay mixtures (4th year)

Pasture mixtures (2nd year)

Grain Crops

During the school term, from October till April, the one year and two year courses in home economics were offered.

The number enrolled during this year was 33 girls; fourteen counties of the province, and Quebec province were represented in this number.

The usual classes of instruction with lectures and laboratory work were given in the following subject: applied arts, textiles, clothing and home furnishings; home management, foods and nutrition; family living, child care, health education and home nursing. In the latter division recognition was given by the Red Cross Society and St. John Ambulance Association for completion of courses in home nursing and first aid. This work was divided among three instructors.

Through the co-operation of other Divisions, classes in bacteriology, chemistry, civics and rural leadership, English, floriculture and woodworking were given. Films and field trips helped to supplement regular class room instruction.

This year completed the first full year of instruction in the new Home Economics building, making full use of improved facilities and class room equipment, as well as attractive and comfortable residence accommodation for home economics students.

Again the K.A.S. Royal show and the annual Fashion show provided opportunity for display of achievements of home economics students. These events give to students experience in planning in group participation and in accepting responsibilities of leadership, as well as a means of promoting good public relations in the community. Large audiences viewed both of these events.

Supervision of the dining hall and furnishing of the students' residence are the responsibility of this Division.

Many visiting groups were entertained, and made use of residence facilities,

during the interval from April to October.

The total number of meals served to regular students and to visiting groups was approximately 66,500.

Extension services included:

- Talks to various Women's Institute and 4-H club groups;
- Open house program at K.A.S. for visiting secondary school students; a series of visits on five days;
- Contacts and visits to prospective students; and
- Talks, on career days, at the request of district high schools to selected groups of interested students.

HORTICULTURE DIVISION

During the school term a course of lectures, laboratory work, and practical instruction was given to the students in agriculture. The subject matter covered such topics as fruit growing, vegetable culture, floriculture, plant disease, botany, and destructive as well as useful insects. Lectures in horticulture were given to the students in home economics.

EXTENSION

During the summer months apple spray service circulars, for local apple growers, originate in this Division. During 1961 some 11 of these information letters were sent out. One hundred and sixty-nine visits were made to various farms to assist growers in their fruit growing program.

Extension service in landscape gardening covered a wide range of activities. One hundred and sixty-three calls were made to give advice on horticultural crops, ornamentals, home and public ground improvement. On the subject of community and farm home improvement some 10 illustrated talks were given to Women's Institutes, Service Clubs and Horticultural Society meetings. The Division provided judges for 5 flower shows and 2 home ground competitions. Landscape plans were completed for 6 public buildings such as churches and community centres. During the summer months the Horticultural Division is responsible for the care and maintenance of 30-acres of campus, 12 acres of fruit trees and about 2 acres of small fruits and gardens.

RESEARCH

Apple Variety Hardiness Studies:

The winter of 1961-62 did not have temperatures sufficiently low to cause any real damage to the apple tree. However the winter damage of 1958-59 is still taking its toll, particularly with the variety Delicious. This variety is top worked on hardy Anis and Antononka frames. While some damage occurred on these trees, they were not killed. They were weakened but have borne crops each year since. Considerable dead wood has appeared in these trees and a number have therefore been removed this spring (1962).

Pear Variety Hardiness Studies:

In 1952 the following pear varieties were planted to assess their adaptability to this region: Mendel, Enie, Menie, Miney, Patten, Philesom, Tait No. 2, and 0-291. The winter of 1958-59 caused considerable damage to some of these trees. Since then we have been removing large amounts of dead wood. Enie, Menie and Miney appeared to withstand the low temperatures. The trees of 0-291 were all badly damaged and may be considered useless. The other varieties were also badly damaged, but some trees remain alive. In ascending order of hardiness they were Mendel, Tait No. 2, Phileson and Patten.

Apple Scab Fungicide Comparisons:

A number of different fungicide programs were compared for apple scab control. There were three basic schedules: (1) Dodine in a full schedule, (2) Dichlone followed by Captan in the cover sprays, and (3) Glyodin or Glyodin and Mercury followed late in the cover sprays by Cyprex. The three basic programs were highly effective against the apple scab fungus.

862 Oil and Cyprex Spray Applications to Apple Trees:

Since there is renewed interest in the use of oil to kill mites on apple trees a small demonstration was set up using an emulsifiable oil 862 supplied by the Imperial Oil Company. In 1960 this oil was combined with the fungicide Dichlone and proved phytotoxic to the trees. In 1961 the oil was combined with Cyprex and applied to apple trees on May 8th, May 15th, May 20th, June 20th, and July 27th. The same trees were sprayed on May 20th and July 27th. There was no apparent phytotoxicity from the first three applications. However, the application of July 27th on the Delicious trees used for June 20th application caused considerable damage to the leaves. All trees bore heavy crops of apples and mites did not become a problem in any part of the orchard.

Control of Grass and Weeds Under Apple Trees:

The chemicals Dowpon, Reglone and Paraquat were applied to the vegetation under apple trees on June 12th to suppress growth. Reglone and Paraquat produced an almost immediate scorch of the vegetation. Dowpon was a little slower in action. Dowpon suppressed the grass but allowed quite a number of weeds such as Canada thistle to flourish and by the end of the second month, a lot of grass regrowth had taken place. In the Reglone plot considerable regrowth of grass occurred by the end of the first month. By mid September the grass was as heavy in this area as in the non-treated areas. The Paraquat plot was slower in grass regrowth but by September 23rd there was a fair amount of grass present. Weeds such as Canada thistle, toad flax, wild carrot and milkweed all flourished in the Paraquat plots. The rainfall was heavy and frequent this year causing tremendous grass growth in mid summer. The results on a drier year might be quite different.

POULTRY DIVISION

The Poultry Division is still a one man department. As a result, most of the time during the winter months is spent on lectures and demonstrations with the students in poultry and in meats and marketing. Classes are usually so arranged to permit one day at least a week to go out on extension work. Projects are carried on each year with assistance from the Ontario Agricultural College, Guelph, and the Central Experimental Farm at Ottawa.

The poultry flock, this past year, consisted of about 11,000 chickens and 300 turkeys with a laying flock of about 2,200 birds being carried over winter.

The laying flock consists mainly of two strains of Leghorns. The one flock is a strain which has been inbred for seven years. The other strain is a blood bank strain which is maintained for the Federal Government. Eggs from this flock are shipped to any hatcherymen across Canada requesting this stock.

The School maintains a flock of White Cornish and also one of White Rocks. The crossing of these two results in excellent birds, both for broilers and for heavy roasters.

Chicken barbecues are gaining favour in Eastern Ontario and each year several are held at the School. The Annual Poultry Field Day for Eastern Ontario is held each year at the Kemptville Agricultural School.

EXTENSION

Extension work carried out over the past year involved assistance with achievement days for eight 4-H Poultry Clubs and visits to poultry club members.

Practical demonstrations were given in debeaking, dewinging, and caponizing of chickens. The debeaker machine was on loan to over 80 poultry farms during the year.

Approximately 25 visits were made to poultry farms to give advice on management, feeding and housing problems.

The banding and blood testing of turkeys in Eastern Ontario was done by this Division during the fall, in addition to judging turkeys at the Royal Winter Fair, Toronto, and poultry at six fall fairs.

Over 4,600 birds were killed and processed in the poultry plant at K.A.S. last year. Practically all hatching for the School flocks is done here, except for turkeys which are purchased.

The main research work carried on last year was the completing of a test with five strains of inbred birds for livability and efficiency of egg production. This test has been completed and is now being processed.

Excellent co-operation has been received from the Regional Veterinary Laboratory in regard to poultry diseases and also from the Agricultural Mechanics Division in regard to buildings and ventilation.

REGIONAL VETERINARY LABORATORY

While the Regional Veterinary Diagnostic Laboratory is a branch of the Ontario Veterinary College, its situation on the K.A.S. campus allows for integration of its services with those of the Kemptville Agricultural School and for close co-operation between these two units.

The Regional Veterinarians are responsible for veterinary services required by the Kemptville Agricultural School cattle and swine herds and the sheep flock. Also they assume the responsibility for veterinary supervision of animals maintained on the campus undergoing observation under the Advanced Registry Test Policy for registered beef bulls. Complete veterinary service is also provided for the Industrial Farm herd located at Burritt's Rapids.

The veterinarians assume responsibility for teaching K.A.S. agricultural students a course in bacteriology and animal health. A course in bacteriology is provided for girls enrolled in the home economics course.

Diagnostic and laboratory services offered by the Veterinary Laboratory resulted this year in the examination of 2,950 carcasses or specimens of various species of animals, the routine testing of 44,055 milk samples for detection of mastitis, more detailed analyses involving 13,942 of these samples, and approximately 9,801 various chemical or biological examinations of specimens for detection of causative agents of disease.

The veterinarians arrange numerous short courses, and assist at many meetings of farm groups.

Some research is still being conducted by the Veterinary Laboratory into the cause of copper deficiency in cattle in Eastern Ontario, and into the mode of inheritance of congenital ichthyosis which has been observed in this area affecting a number of cattle.

Western Ontario Agricultural School and Experimental Farm

During the 1961-62 fiscal year a general expansion was experienced in all phases of the program. A record 105 students registered in the first year, 75 of whom having at least 4 years High School training, a number of these with varying numbers of Upper School subjects. Sixty-eight registered for the senior year course. As the academic standing, as well as the age of the students, increases the amount and depth of instruction increases. This is a desirable trend. It is interesting to note that no students left the course on their own volition and none were asked to leave except for the reason of low standing.

Basic Agricultural principles are fundamental in instruction, but courses are amended each year to meet the needs of this changing Agriculture.

W.O.A.S. gratefully acknowledges the assistance and co-operation received from the Agricultural Extension Branch, Ontario Veterinary College, Ontario Agricultural College, as well as all other organizations and individuals who gave their services at various times of the year.

The Research program has developed to the point that it is requiring as much as 80% of the time of many of the staff. Some 150 projects were conducted during the year, most of these were on the station, others were in co-operation with individual farmers located at strategic points in Southwestern Ontario.

During the year, 25 acres of poorly drained Brookston clay soil, approximately 1-1/2 miles southeast of Petrolia, were acquired to extend the off station research program. This site is quite typical of the region and will place an increasingly heavy burden on the staff, particularly in the Crops and Soils Divisions.

As the research increases so also does the demand for the services of the personnel to disseminate the results and make recommendations through Southwestern Ontario and now extending into Central Ontario. Staff members receive requests to address many types of Agricultural meetings, e.g. Soil, Crop, Livestock, Weed Control, Farm Business Management, Junior Farmer, 4-H, Service Clubs, etc. There is also an increasing demand for personnel to serve on various provincial and national Research Committees.

These off station meetings coupled with the station extension are very time consuming. Some 8,000 visitors in organized groups visited the campus during the year, some as conducted tours only, others to use the facilities, residence, and/or classrooms, as well as tours. Some 3,000 attended the 24th Annual Farmers' Week held from January 15-19, inclusive. Two programs for the ladies were held this year, one landscaping and flower arrangements, the other home budgeting and bookkeeping. Both proved to be very successful.

ACADEMIC FUNCTIONS

GRADUATION -

On Tuesday, May 16, 1961, the Annual Graduation Exercises were held in the Livestock Building, with the Honourable Wm. A. Goodfellow, Minister of Agriculture, delivering the address. Dr. C. D. Graham, Deputy Minister, assisted in the Graduation by presenting diplomas to the Graduates.

BACCALAUREATE SERVICE -

On Sunday, March 18, 1962, the Annual Baccalaureate Service for the Graduating Class was held in the Auditorium. The address was delivered by Rev. W.A.

Young, B.S.A., Public Relations Officer and Chaplain, Ontario Agricultural College.

REMEMBRANCE DAY SERVICE -

The Annual Remembrance Day Service was held on November 10 in the Auditorium, with full attendance of students and staff. This service was conducted in its entirety by members of the staff who served in the armed services.

STUDENT ACTIVITIES -

To have balanced education it is imperative that students participate in an extra-curricular activity for experience in organization and responsibility. The following constitute student organizations.

- Student Council assisting in general organization, discipline and social functions.
- 2. Literary Society sponsors Public Speaking, Skits, etc.
- 3. Athletic Society organizes and administers sports program.
- 4. Glee Club voice training and recreational singing.
- Year Book a Second Year sponsored project, financed by students through the sale of the production.
- 6. W.O.A.S. Review a show window of some of the practical work completed during the year, including livestock and crop showmanship and educational exhibits.

This program attracted approximately 1800 visitors.

HORTICULTURE AND BIOLOGY AND HERBICIDES

The duties of this Division are briefly as follows:

- Experimental work in chemical weed control of all crops (field and horticultural) and some cultural practices and variety testing of some horticultural crops.
- II. Teaching courses in horticulture and biology.
- III. Extension to the public including farmers, homeowners in the form of talks, call on the request of individuals and meetings.
- IV. The maintenance and landscaping of the grounds and upkeep of an orchard and a garden.

I. Experimental Work

A. Chemical Weed Control in Field Crops and Horticultural Crops

Twenty-two experiments, involving the testing of various new and established chemicals at different rates, of different formulations on various field, ornamental and fruit and vegetable crops were carried out during the previous summer months.

- 1. The accuracy of granular herbicide application on field corn using various granular formulations of 2,4-D, Randox, Randox Tand Atrazine was tested meanwhile observing the effect of these on the corn crop. Great variability of flow was noted in the different chemicals.
- 2. Five chemicals were tested for or pre and post-emergent weed control on field corn using the chemicals with and without wetting agents.
- 3. The effectiveness and safety of five chemicals, including different formulations of some of these, was tested when applied as pre and post emergent application on sweet corn.
- 4. Flame cultivation using propane gas, was tested against weed control using 2,4-D and common cultivation methods in field corn.

- 5. The testing for the control of grass in processing peas using seven herbicides was carried out.
- 6. The safety and effectiveness of an MCPB/MCPA mixture applied at four stages of a processing pea crop, was tested for since low quantities of MCPA will kill some weeds that MCPB will not kill.
- 7. Liquid and granular forms of nine chemicals were tested on the basis of effective pre and post-emergent weed control in soybeans.
- 8. Varietal response and yield from different row spacing of soybeans when sprayed with amiben to control weeds was the sought after information in an experiment.
- 9. Twenty-seven treatments, involving a long list of new chemicals tested as a pre and post-emergent application on white beans, resulted in one hundred and eight replicated plots.
- 10. Different rates of Eptam and its analogues were tested on sugar beets, applied as preplant and incorporated into the soil.
- 11. Ten herbicides applied pre and post emergently in sugar beets were tested for effectiveness of control of weeds and their effect on the crop.
- 12. Seven herbicides, applied pre-emergence and three post-emergence to the weeds in potatoes, were tested for their effect on crop and weeds.
- 13. Several chemicals were applied preplant, pre and post-emergence to weeds to test for effectiveness of weed control and effect on direct seeded tomatoes which is a relatively new development concurrent with machine picking processing tomatoes.
- 14. Four chemicals were applied preplant, six chemicals pre-emergence to weeds and two chemicals post-emergence to weeds to test for their effect on weeds and tomato crop.
 - 15. Several chemicals were tested for weed control in asparagus.
- 16. Pre and post-emergence weed control in onions involved 15 treatments (60 plots) of various chemicals at different rates.
- 17. From quite a few chemicals and combinations of them applied under apple trees, Diuron has shown up as the outstanding chemical for weed control.
 - 18. Rates residues of Diuron for weed control was tested for in grapes.
- 19. Work is carried on to control a host of very difficult to control perennial weeds totaling 195 treatments or 390 plots.
- 20. The control of mouse-eared chickweed in turf, using liquid and granular formulations of seven chemicals was sought after.
- 21. The effectiveness of liquid, powder and granular formulations of eight chemicals for broad-leaved weed control in turf was tested.
- 22. The effectiveness of liquid, powder and granular formulations of four chemicals applied pre-emergence to crabgrass in turf was tested.

B. Variety Trials of Horticultural Crops

- 1. Seven spring varieties of hothouse tomatoes were tested for yield and effect of various diseases on them.
- 2. Seventeen varieties of fall hothouse tomatoes were tested for yield, resistance to leaf mould and tomato mosaic virus.
 - 3. Twelve varieties of turf are being tested for performance on a sandy soil.
- 4. Sixty varieties of hardy chrysanthemums were tested for performance of bloom, etc., and winter hardiness.

C. Cultural Methods in Horticultural Crops

1. Several varieties of junipers and other coniferous and deciduous plant material were propagated under mist and tested for the ability to overwinter the first

winter.

2. Three early tomato varieties were seeded direct, transplanted once and transplanted twice in various containers to determine the best method of culture prior to setting out into the field.

IV. Maintenance of Grounds, Orchard and Garden

Approximately sixteen acres of grounds, ten acres of which are in turf, have required a share of time and labour to maintain them in a presentable state. Two new buildings required planting of ornamentals the past year. Also, approximately an acre of turf was added to the grounds.

The orchards and the garden serve in some cases a two fold purpose. One is for some of our experimental work (e. g. grapes, fruit trees) and the other is to produce food for the school. Also, the aim is to maintain a sample of all fruit tree varieties here.

ENGLISH

The English Division is responsible for:-

Instruction in English and Public Speaking for both Junior and Senior Years and in Civics for the Senior Year.

Supervision of the Library and, during the school term, of extra-curricular activities, including the Literary Society and preparation of the school year book "Souvenir".

Public Relations and Extension, including writing of school calendars, articles and publicity; coaching and judging in debates and competitions; speaking to various civic, church, and farm groups; arranging programs of school events.

POULTRY

NUTRITION

Effect of various methods of feed restriction during the growing period on the subsequent reproductive performance of egg production type poultry.

A study was completed involving manual restriction of feed intake vs restriction of energy by means of non-nutritive fibrous, bulky material replacing the grain portion of the ration. Ration dilution by means of dehydrated corn-cob meal replacing grain was used as a means of increasing bulk.

Results in the growing period indicated the tremendous ability of the chicken to compensate for non-nutritive bulk in the ration by increasing feed consumption to satisfy the needs of the body.

Forty percent or more of the grain portion of the ration must be replaced by fibre in order to restrict the nutritive portion of the ration. Levels up to 60% of fibre were about equal to a 20% manual restriction of feed intake. These higher levels were detrimental to the health of the birds in the presence of disease stress from coccidiosis.

Only locally produced wheat and corn were used in this experiment.

Egg production in all groups averaged approximately 60% over a twelve month period when calculated on a hen day basis. This is not considered high enough. A level of 60% fibre in the growing ration did support a higher level of production, but mortality was excessive during the growing period. This group also exhibited an excessive delay in attaining maturity.

The results indicate that feed restriction by means of energy restriction is too expensive for most practical conditions.

It would appear that some limiting factor is present to limit egg production to a sub-optimum level.

Replacing grain with bulky fibrous material results in an unbalanced ration which might have an effect on subsequent production.

The higher egg production level of pullets fed on very high fibre diets indicates these pullets may make more efficient use of their feed.

Further experiments are being conducted in this area.

Effect of continuous feeding of reserpine on the incidence of aortic rupture, feed conversion and body weight of market turkeys.

This is the second experiment on this problem and was complete late in the current year.

One level of reserpine was fed continuously to large white turkeys and compared to a zero level of the drug in a 2 x 4 factorial type of experiment.

Results indicate a slight depression of feed efficiency and body weight when the drug is fed continuously. Aortic rupture disease was not encountered during the experiment.

GENETICS

An evaluation of pure and crossbred progeny of a pure strain of White Leghorns maintained at the farm is currently being conducted.

Males from three other pure strains of White Leghorns were used to produce the strain-cross progeny.

MANAGEMENT

An experiment to evaluate various laying hen management systems is in progress. This is a long term experiment necessitated by the fact that no replications are possible because of limited space.

Management systems being compared are (1) deep litter (2) slatted floors (3) laying cages and (4) combination of slatted floors and deep litter.

PHYSIOLOGY

A cooperative experiment on the use of nilevar with poultry is being conducted in cooperation with the Department of Poultry Science, O.A.C.

MARKET POULTRY

Capons and turkeys were raised for classroom work.

AGRICULTURAL ECONOMICS

As a part of an expanded program of the Department of Agriculture in Farm Business Management, the division has geared its extension efforts in this field of economics to the existing program of the area. In addition, new program series have been developed, including detail of material for presentation to farm groups sponsored by various organizations. The organizational centre is the County agricultural Representative and the medium varies through Farm Management Associations, Junior Farmers Associations, Soil and Crop Improvement Associations, the Federation of Agriculture and localized or community organizations such as night schools, Farmer's Clubs, commercial firm meetings and fraternal groups. Assistance to individuals with problems inkeeping accounts, interpretation of account analyses, operating agreements and budgeting and credit management is provided to individuals making requests direct to the division.

In addition to supplementing the extension branch program of the counties in the area and contributing to the educational program of the school, the division is commencing studies in both the Marketing and Production Economics Fields.

The emphasis of the division is on Farm Business Management, a Market de-

mand for products of the area is observed and trends assessed, where possible, for improved planning. The institutional framework of the marketing process is reviewed continually to further assist in production planning.

Current research studies are as follows:

- (1) The relative contribution of the five counties to Agricultural production in Ontario; a note on potential.
- (2) Labour Efficiency and increased costs of production in a swine disease control program using isolation units, (virus pneumonia and rhinitis)
- (3) An application of Linear Programming for farms in South Western Ontario.
- (4) The Economics of a grain dryer.
- (5) Cash Crop Budget data.

INTER-REGIONAL ACTIVITIES

1. The Agricultural Economics Co-ordinating Committee meets quarterly to discuss the provincial research, and educational program.

Duplications of effort are minimized and replications justified.

The division acts as a delegated member.

2. Emergency Measures Organization

Since Ridgetown has been designated a food, clothing and hospital centre of the Windsor target area, contributions by the division to this organization may increase as the E.M.O. program develops.

PUBLICATIONS

A circular letter is being developed for monthly distribution to farmers contacted by the division. This is primarily a follow-up device to maintain farm management interest and provide ideas and suggestions for the improvement of operation.

Contributions to a central pool of Farm Budget data are forwarded for distribution through the Information Branch.

SOILS

The research program is progressing as rapidly as possible with limited personnel. The following represents a list of the projects conducted by the Division during the year and unless otherwise indicated they were conducted on the station.

- Effects of various combinations of barnyard manure, commercial fertilizer and nitrogen additions to stalk plowdown, on the growth and yield of continuous grain corn production, as well as on the soil nutrient level and soil physical condition.
- Effect of molybdenum on the growth and yield of soybeans growing on a high lime soil.
- Effect of various rates of nitrogen, applied as a pre-plant application on the growth, yield and quality of dwarf sunflowers.
- Response of white beans to rate and time of application of nitrogen, phosphorus and potassium.
- Response of soybeans to rate and time of application of nitrogen, phosphorus and potassium. (two off-station projects)
- Effect of various rates and time of application of nitrogen, with varying harvest dates on the growth, yield and % sucrose of sugar beets.
- Effect of different rates of application of nitrogen, phosphorus and potassium on yield and nutritive value of a long-term stand of alfalfa-brome.

- Evaluation of an organic soil amendment on the growth and yield of field tomatoes, grain corn, peas and white beans.
- Effect of different rates of fresh barnyard manure on the growth, yield and quality (chlorine in particular) of burley tobacco grown on a Fox gravelly loam soil.
- Evaluation of a potential fertilizer material, using sugar beets and grain corn as indicator crops.
- Effect of various population rates on the growth and yield of corn, on (A) a well-fertilized and (B) a non-fertilized soil (2 trials).
- Fertilizer placement for a rotation of fall wheat, grain corn and soybeans. The effects of starter applications, broadcast applications and band applicators are studied in this trial.
- Effect of different rates of manganese and magnesium on the growth and yield of oats showing severe deficiency symptoms. (off-station project)

FARM CROPS

The Farm Crops Division conducted 87 trials and tests in 1961-62. Below is a summary of main project headings.

Eight sites, ranging in distance from 30 to 80 miles from Ridgetown, as well as W.O.A.S., are being used for research projects.

- Evaluation of Winter Barley Strains and Varieties.
- Evaluation and Selection of Winter Wheat Strains and Varieties.
- Evaluation of Spring Oat Strains and Varieties.
- Evaluation of Spring Barley Strains and Varieties.
- Evaluation of Spring Grain Mixtures.
- Evaluation of Field Bean Strains and Varietiex.
- Evaluation of Soybean Strains and Varieties.
- Evaluation of Sugar Beet Hybrids and Varieties.
- Evaluation of Potato Strains and Varieties.
- Evaluation of Corn Hybrids.
- Evaluation of Burley Tobacco Strains and Varieties.
- Evaluation of Irrigation Practices.
- Effects of Spacing and Manuring on Burley Tobacco Production.
- Production Practices Affecting Field Corn Performance.
- Production Practices Affecting Sugar Beet Performance.
- Evaluation of Hay-Pasture Mixtures.
- Evaluation of Alfalfa Strains and Varieties.
- Evaluation of Orchard Grass Strains and Varieties.
- Evaluation of Red Clover Strains and Varieties.
- Evaluation of Brome Grass Strains and Varieties.
- Evaluation of Annual Silage Crop.
- Growth Curve of Alfalfa and Brome Grass.
- Row Width Study, Forage Species.
- Evaluation of Annual Crops for Pasture.

LIVESTOCK

Responsibilities of the Livestock Division include in addition to teaching and extension, livestock management and research and management of the general farm.

FARM PRODUCTION

Two hundred and fifty acres are devoted to crop production and pasture. Crops grown include corn, winter wheat, oats, hay and pasture. All crops are

utilized for feed. Controlled management of crops makes it possible to record useful production information and it also ties in with feeding trials on poultry and livestock.

LIVESTOCK

DAIRY CATTLE - Two breeds of dairy cattle are maintained on the farm. Record of Performance results for the past year were as follows:

		M	ilk	Butterfat		
Breed	No. of Records	Lbs.	B.C.A.	Lbs.	B.C.A.	
Holstein	11	14983	142	561	145	
Guernsey	9	9494	135	484	137	

Sixteen dairy heifers were used on a hay feeding during the winter of '61-'62. The trial was designed to measure intake and rate of growth using early cut versus late cut hay.

BEEF CATTLE - Both Shorthorn and Hereford herds are maintained at W.O.A.S. These herds are treated as a cow-calf proposition.

Offspring are utilized for:

- 1. Teaching (both as live and carcass classes)
- 2. Feeding experiments.

BEEF SIRE TESTING

W.O.A.S. co-operates with the Advanced Registry Board for Beef Cattle in the feeding and management of bulls while on test. During the past year 21 bulls have completed rate of gain tests at the Ridgetown Test Barn. These include 18 Herefords, 2 Shorthorns, 1 Angus.

An off station feeding trial was conducted on beef steers to evaluate the use of sugar beet pulp in steer rations.

SWINE - Both Yorkshire and Lacombe herds of swine are maintained and used for classroom instruction and research.

On official R.O.P. test the following herd averages were obtained.

	Carcass Score	Age to Market		
Yorkshire	92.9	173.3 days		
Lacombe	94	166 days		

The entire aged sow herd have official scores of over 90. The isolated farrowing and selection for resistance to V.P.P. and A.R. were continued, and gilts from two completely clean litters will farrow under this program in 1962.

Several high score sows were placed with the Ontario Veterinary college for Caesarean operation and their progeny will be used in the Ontario Agricultural College.

SHEEP - Specific pathogen free swine program.

Two flocks of sheep, Suffolk and Southdown, are maintained, primarily for classroom instruction.

Weights at birth and ninety days were taken, and replacement ewes are being selected on the basis of progeny testing.

AGRICULTURAL ENGINEERING

Agricultural Engineering Specialists of the Extension Branch are responsible for the work in this division. Their obligations are three-fold.

- 1. Responsible for the Engineering Extension Services in the counties of Essex. Kent and Lambton.
- 2. Instruction in Agricultural Engineering and Mathematics to the students in the school.
- 3. An applied research program with the Experimental Farm being used as a testing ground.

Demonstration Farm - New Lisheard

The New Liskeard Demonstration Farm which consists of 320 acres, continued to serve most sections of North-Eastern Ontario by providing increased facilities and agricultural information obtained from this unit to these areas.

The new Agricultural Services Building was made available for use on June 5th, 1961, and was officially opened by the Hon. W. A. Goodfellow, then Minister of Agriculture and the Hon. Ray Connell, Minister of Public Works on August 12th 1961. Some 500 people from North-Eastern Ontario attended the opening ceremonies.

During the past four years the farm has undergone considerable change to better serve agriculture generally, and more specifically, to provide increased leadership and information regarding animal and field husbandry practices which are applicable to North-Eastern Ontario.

In addition to the Services Building, the following buildings have been erected or renovated during this period – a clear span loose housing beef barn, an 18×40 upright silo, equipped with augerfeeder and silo unloader, sheep barn and poultry house, and alterations to interior of the main barn.

REGIONAL AGRICULTURAL SERVICES BUILDING

This building represents the first of its type in North-Eastern Ontario, and provides many of the facilities and services required by Agricultural people. Office accommodation is provided for personnel of the following; Extension Branch, Dairy Fieldman, D.H.I.A. Supervisor, Regional Veterinary office and Diagnostic Laboratory and the Demonstration Farm staff. The Board Room facilities are widely used for Agricultural meetings, Instructional meetings and Training Schools. Also in the building are two small workshops which are used for maintenance and repair of machinery and buildings at this unit.

A large increase was noted during the year of farmers, tourists, visitors, and Agricultural organizations, visiting the unit for meetings, farm tours, conferences and demonstrations.

FIELD HUSBANDRY

The 1961 growing season, was excellent from the standpoints of forage and pasture production, but difficult for the production of cereal grains. Adverse weather conditions during seeding and harvesting, had a detrimental effect on the crop, the result being that grain yields were approximately 15 bushels per acre less than in previous years.

The hay crop was particularly heavy with yields up to 4 tons per acre on single cut, giving an over all average yield in excess of two and three-quarter tons per acre.

Experimental data on cereal grains, soup peas and forage crop varieties are obtained through the test plot areas maintained at this unit in co-operation with the Field Husbandry Department of the Ontario Agricultural College. Results from the cereal - forage crop plots are used in making recommendations for Zone 7.

Additional information on varieties and cultural methods are also obtained through field trials in the regular farm program.

An additional 120 acres were leased in the immediate area of the Demonstration Farm to provide additional acres for forage crop and pasture requirements.

1961 FORAGE AND CEREAL ACREAGES

Oats	105
Barley	30
Hay and Silage	145
Field Peas	4

Field tests on cereal grains were limited to the main varieties being grown in the area:

65 acres of Garry oats averaged 65 bushels to the acre and Shield on thirty acres yielded 40 bushels. 15 acres Nord barley - 41 bushels per acre 15 acres York barley - 39 bushels per acre

Balance of farm acreage is used for live stock pasture.

Thirty acres was seeded down to the following hay pasture mixture:

Vernal Alfalfa 6 pounds
Red Clover 2 pounds
Climax Thimothy 4 pounds
Lincoln Brome 6 pounds
Ladino 1 pound

The above mixture over the past three years has proven the most satisfactory on this particular unit.

PROJECT "A"

Four - eight acre plots were seeded down to combinations of two varieties of Alfalfa, Ladino clover, Brome, Orchard Timothy and Meadow Fescue as compared to the Vernal and Rhizoma Alfalfa, Ladino clover, Brome Grass, Timothy.

Object - To compare -

- (a) Vernal Alfalfa as to the variety Rhizoma
- (b) To determine the value of orchard grass under local conditions in hay and pasture mixtures.

PROJECT "B"

BIRDSFOOT TREFOIL - Three - two acre plots of Trefoil varieties, Empire, Viking and Lochchilde were seeded in the Spring of 1960, on a low, poorly drained section of the Farm. Of the three varieties, Viking appeared to have established the best catch and earlier than the other two varieties used.

PROJECT "C"

Pasture (Nitrogen Application Test)

This project was started in the Spring of 1960 to determine the value of nitrogen on pasture, as such, one 10 acrefield was divided into two 5 acre plots. Plot "A" receiving a 150 lb. (45% Urea) application as compared to Plot "B" which received similar management practices other than no nitrogen application.

Beef heifers were weighed on and off pasture and the numbers placed on the respective plots was determined by the production of each plot.

TILE DRAINAGE

One forty-five acre field was tile drained in 1959 to determine the practicability of under-drainage in the area. Prior to this installation concensus in the area was that tile drainage while required, would not function properly in this particular soil. However, 2 year results on this field and 7 year results on a 13 acre field have disproved this opinion. Two year results show increased yield and has allowed spring seeding operations and harvesting to be completed 10 to 13 days earlier than on other farm land where natural drainage is relatively good.

Expectations are that tile drainage will become more important in the area and alleviate many of the perennial problems which occur during seeding and harvesting operations.

GRASS SILAGE

The 18 x 40 upright concrete slab silo and automatic silo unloader and auger feeder, installed in 1959, has continued to work most satisfactorily during the two winters of 1960-61. Frost penetration both winters in from the sides of the silo, has shown little variation, freezing to a depth of 32" in 1960 and 33" in 1961. However, no difficulty has been experienced in the removal of silage from the silo or the bunker feeder operation.

Silage making commenced July 4th with refilling completed in September. Such silage was straight cut with no wilting time, silage both years has been of excellent quality. Protein analysis revealed protein content of 13.3%.

Interest in silage and its application to the livestock winter feeding program continues to increase with considerably more requests from farmers for information regarding silage being received. On the basis of the information obtained at this unit, it would appear that greater use will be made of silage and be of considerable value in alleviating many of the problems normally encountered in the haying season and cattle winter feeding program.

JUNIOR EXTENSION

Through the medium of the unit and the existing personnel it was possible to co-operate with the Extension personnel and others, to a much greater extent than in previous years.

Assistance has been given in livestock and seed classes, demonstrations, and in providing accommodation for the various Field Days and Competitions.

Farm staff have acted as club leaders, judges, speakers, and in conducting farm tours for the various Junior groups visiting the unit.

SENIOR EXTENSION

The number of farmers and other agricultural people visiting the unit continues to increase and as such, considerably more time is required for conduction of farm tours and other information requested.

Senior Agricultural Organizations have made considerably more use of the Farm facilities and staff.

Farm livestock and Field Husbandry practices and projects continue to be of great interest and value to all individuals and groups. As such, the results obtained from such projects are much in demand. Similar requests are received continually for surplus breeding stock from the livestock being kept.

Assistance to all Extension personnel, Agricultural Organizations, Service Clubs, Fall Fairs, and Seed Fairs, has been given in the form of addresses, farm tours and judging at both Fall and Seed Fairs.

Two pilot short courses were held this past winter in electric and acetylene welding. Results were most favourable and indications are that a considerable number are interested in a similar Short Course for next year. Both courses were given in co-operation with the Agricultural Engineer and Farm staff.

EXHIBIT SERVICES

Through the co-operation of the Exhibit Department located at the Ontario Agricultural College, we have been able to make available, considerable exhibit displays for use of all Department of Agriculture personnel in Northern Ontario.

Liaison with local newspapers, radio and TV has been excellent with all unit projects receiving very good coverage. This co-operation is much appreciated and has been of invaluable assistance to publicize unit activities.

The farm continued to give assistance to the Beef Producers in the New Liskeard - Matheson and Kapuskasing Districts, in the selection and purchasing of breeding stock. For this past year the superintendent has acted as Secretary for the New Liskeard - Matheson Feeder Cattle Sale.

WEED SPRAY SCHOOL

Some ninety-five farmers and weed inspectors attended a one day weed spray school during the year. Instruction and demonstrations were well received. Plans are to continue the project yearly.

This program was organized co-operatively with the Field Crop Branch, Agricultural Extension personnel in North-Eastern Ontario and the Demonstration Farm staff.

LIVESTOCK

Registered livestock maintained on the Farm consists of Hereford cattle, Yorkshire hogs and North Country Cheviot ewes.

Fifty-five percent of the total beef herd is made up of Grade Herefords. Sales of breeding stock were confined to Yorkshire pigs to farmers in North Eastern Ontario for breeding stock replacements.

The demand for bred or open beef heifers continues strong from commercial beef producers. However, due to the building up process of the herd and the subsequent reduction through culling, no sales were made.

The livestock maintained at this unit is to provide area farmers with practical information on the various aspects of livestock housing and management.

BEEF CATTLE

Progeny records are maintained on the complete cow herd. The plan being used is the Plan "B" - Herd Test as recommended by the Advanced Registry Policy for beef cattle.

Herd sires used are also Perfomance Tested sires.

The present herd consists of $5 \, \mathrm{bulls} - 84 \, \mathrm{cows} - 56 \, \mathrm{heifers} - 24 \, \mathrm{steers}$ and $17 \, \mathrm{calves}$.

Most of the herd, other than the spring calves, are maintained under loose housing conditions which continues to be satisfactory under Northern conditions. The complete herd being wintered on hay and silage with no animals over 1 year of age receiving a grain ration.

STEER CALVES - (120 Day Winter Feed Cost)

Four late summer steer calves were placed on a maintenance ration of hay, silage and 16% grain ration for a period of 120 days to determine the cost of wintering steer calves.

The level of feeding was determined by computing the nutritive requirements of the animal according to body weight - this level to be such that the animals would hold body maintenance and growth to approximately 3/4 lb per day gain.

No. of Animals	Length of Period	Av. Start- ing Wt.	Av. Wt. at end of Period	Total Cost of Grain	Cost of Hay Fed			Cost per lb. grain
4	120 days	388 lbs.	542 lbs.	47.80	37.20	16.80	101.80	16.7¢
SWINE		0	Daily Gain ues - Grain Hay Silage	- \$ 3.50	per cwt.			

The swine herd consists of 6 sows and 1 boar. Four of these sows are Canadian Yorkshire Breeding and two of English breeding. Most of their progeny is sold to farmers for breeding stock replacements.

Seventy pigs were marketed during 1961 - the grading percentage being 86% Grade "A" and 16% "B1's".

SHEEP

The present Sheep Flock consists of 47 Registered North Country Cheviot ewes. This flock is jointly owned with Canada Department of Agriculture.

Twenty-five ewes are used in the production of registered North Country Breeding stock, while the remaining ewes are used to obtain cross-breeding data using a Leicester ram, for the initial cross. Plans are to use either a Hampshire or Shropshire on the cross-bred ewes.

POULTRY

The poultry flock consists of 900 Leghorn hens - this being the number placed in the hen house in September 1961.

These pullets were obtained from the Kemptville Agricultural School at 8 weeks of age and range grown on a restricted feeding program until placed in the

The flock is maintained to provide poultry producers in the area with information on feeding, housing, packaging and grading procedures and other phases of poultry management.

Several demonstrations were given in debeaking poultry with the Debeaker being loaned to some thirty poultry producers and farmers during the year.

LIVESTOCK HOUSING

The most difficult aspect of winter housing conditions for livestock, poultry flocks etc. in Northern Ontario is proper building ventilation. With many of the accepted ventilation practices used in other parts of the province not proving satisfactory in most of North-Eastern Ontario.

REGIONAL VETERINARY DIAGNOSTIC LABORATORY

The Regional Veterinary Laboratory and personnel provided valuable assistance with instruction at several livestock programs in Animal Health and Bacteriology. In addition it provided Veterinary services for the Farm herds and flocks. Their co-operation and services being most appreciated.

Strathclair Farm - Sault Ste Marie

STRATHCLAIR FARM - SAULT STE. MARIE

Strathclair Farmis a Demonstration Farm situated on the north-eastern fringe of the City of Sault Ste. Marie, in the Township of Tarentorus. The Farm consists of approximately 300 acres, and is operated by the Ontario Department of Agriculture in the interest of education and research. General farming operations have been carried on to maintain and develop a beef herd of Herefords, in addition to these operations various trials have been conducted with cereals, grasses, and legumes.

The land is very flat with the exception of 40 acres of rolling pasture. The flat land presents a problem at various times during the year with the accumulation of surface water. The soil is of a sandy loam nature with approximately 13 acres of clay loam around the buildings. This soil with adequate fertilization is very

productive in the growing of forage crops.

EXTENSION:

Each year the facilities at the Farm are being used to a greater extent than the previous year. Ideas on good farming practices are promoted with the facilities at the farm being made available to farm organizations.

On July 5th, a Grassland Day was held at Strathclair Farm, sponsored by the Algoma Soil and CropImprovement Association. This Field Day was very well attended with approximately four hundred farmers from the District being present. A demonstration was given by Machinery Dealers in the District on the various types of machines that are currently available to harvest forage crops.

The Algoma Junior Farmers held their Annual Judging Competition on July 7th, with 107 contestants competing. Classes were conducted on beef cattle, dairy cattle, potato and grain. The classes of beef cattle were chosen from the Farm herd and afforded some excellent instruction to the 4-H Beef Calf Club members.

School children from nearby schools arranged for conducted tours of the Farm as part of their agricultural curriculum. The Sault Ste. Marie Chamber of Commerce held their Agricultural Meeting at Strathclair Farm. This meeting was conducted as a tour with the members keenly interested in assessing farm problems.

SEEDING:

Seeding operations commenced the third week of May with relatively good weather. One field of twenty acres was sown with Garry oats and undersown with a mixture of Timothy, Red Clover and Alsike. This field was fertilized with 4-24-12 at the rate of 200 pounds per acre.

A thirty acre field was seeded with a mixture of Garry oats and Chancellor peas in the ratio of 3 bushels of oats to 1 bushel of peas. This field was fertilized with manure the previous Fall and with 4-24-12 at the rate of 200 pounds per acre at the time of seeding. Fifteen acres of this field were harvested as ensilage, the remainder was allowed to mature further and harvested as hay.

Approximately two acres were sown to the new variety Russell oats, and a comparison made with the variety Garry. The comparison was made as to yield, and weight per bushel; both varieties being grown, harvested and handled under similar conditions. It was found that Russell yielded 3.8 bushels per acre more than Garry, and weighed 1.1 pounds per bushel more than Garry.

SILAGE:

There are two silos at Strathclair Farm, one of a horizontal construction and

the other a tower silo. The horizontal silo was filled with a mixture of Reed Canary Grass and Red Clover from a 40 acre field. This has been the fourth year for this field which yielded approximately 3 tons of forage per acre. The quality of this silage has been good with very little freezing occurring during a severe winter.

The tower silo was filled with a mixture of oats and peas realizing approximately 8 tons of ensilage per acre. This crop produced excellent silage during the winter months, although considerable freezing occurred supplies were sufficient to meet winter needs.

HAYING:

Haying operations commenced the second week of July with a satisfactory crop being harvested. Weather conditions during the haying season were excellent and the hay was of a good quality. All hay is field baled and placed immediately in storage. The average yield was 1 3/4 tons per acre and amounts stored will be sufficient to meet winter needs.

HARVESTING

Harvesting the grain crop was conducted without any difficulties except yields were low due to scalding that occurred throughout the District during the month of June. This reduced the yield to one-half of normal, with other areas in the district reporting a total loss. The grain is mixed with a 32% beef concentrate and fed to the calves.

PASTURES

All pasture fields are fertilized in the Spring with 33% Ammonium Nitrate and 4-24-12 producing extra early growth of pasture.

Weed control on pastures is obtained by using various herbicides. Demonstrations on the use of weed sprays on pastures have been conducted for visiting farm groups.

DRAINAGE

Drainage has been a major problem at Strathclair Farm and throughout the District of Algoma. The low flat land and the accumulation of surface water presents a problem during wet seasons. The use of open ditches has helped a great deal to eliminate the surface water. Last year existing open ditches were cleared and new ditches opened. All ditches were sprayed with Dowpon to remove the cattails and some ditches have been grassed to prevent erosion of the sandy loam soil.

On plowed fields narrowlands have helped a great deal to remove accumulated surface water.

LIVESTOCK

The Farm maintains a herd of purebred Herefords, consisting at present of 3 bulls, 43 cows, 56 heifers, and 5 calves. The purpose is to focus attention on beef raising as it applies to farm management and breeding. All bulls are Performance Tested Sires.

All available data is being recorded on the female progeny, birth weight, weaning weight, yearling weight, and two year old weight. Weaning weights of all calves are converted to 205 day weights as standard for comparisons. All bull calves are steered and sent to the Ontario Agricultural College for further tests.

The cows are pasture bred and the calves run with their dams during the pasture season. All heifer calves are vaccinated,

All calves are dehorned with an electric dehorner which has proven very satis-

factory. Tests on systemic warbicides have been conducted with good results showing a marked difference between treated and untreated animals.

During the winter, half the cow herd was stabled and tied in the conventional type stanchions. The other half of the herd was housed in an open barn with hay and silage being fed outside in bunks.

The herd was subjected to a Tuberculin Test and a Blood Test to determine Brucellosis carriers. The herd was reported free on both tests. All animals are in a thrifty condition.

BRANCHES OF THE ONTARIO DEPARTMENT OF AGRICULTURE



Agricultural and Horticultural Societies Branch

In general 1961 could be considered a very satisfactory year in the life of our agricultural societies. Weather was on the whole ideal although a few societies experienced considerable loss in gate receipts because of rain on the day of their show. Listowel, Shedden and Charlton were among those losing their entire gate receipts. Despite this only twelve societies claimed wet weather grants.

There are on record 251 active societies and 241 of these held a fair in 1961. Those not sponsoring a fair carry on other projects such as field crop competions, 4-H clubs, plowing matches etc.

CLASSES OF SOCIETIES

In accordance with the regulations of the Agricultural Societies Act, societies are classified as A, B, and C. However, it is found to be more in keeping with federal regulations to use the term Fair in place of Society, when referring to classification. In any case an A Society sponsors an A Fair, a B Society a B Fair and a C Society a C Fair.

Ontario's 241 Fairs are therefore classified as follows: A - 8; B - 42; C - 191. Congratulations are extended to Almonte, Beeton and Petrolia, in being elevated to B class as of April 1st, 1961.

Entries from exhibitors at fairs is a guide in determining to some extent the success of the show. Sixty-three percent of those reporting had an increase over 1960, in some instances the amount was quite substantial.

More than fifty-five percent of the fairs had larger gate receipts than in the previous year. Some of this increase was due to higher admission charges. Some fairs increased their gate admission charges and in return offered a free grandstand. The highest gate admission was \$1.00 with charge for car parking extra. However, the gate admission for adults is still $50 \, t$ at the majority of fairs but quite a number of the A and B fairs charged $75 \, t$.

Fairs reporting a substantial increase in revenue over 1960 from sale of gate admissions included: Ottawa, London, Simcoe, Belleville, Galt, Lindsay, Kingston, Paris, Owen Sound, Ancaster, Brigden, Erin, Renfrew, Tillsonburg, Midland, Port Hope, Dryden, Petrolia, Collingwood, Wellesley, Elmira and Arnprior.

For one day fairs Rockton led the list with receipts amounting to \$6,995.00. Teeswater was second with \$5,419.50.

The following table shows those fairs with highest receipts in each of the three classes.

A Fairs		B F	airs	C Fairs		
Toronto (C.N.E.)	\$952,904.00	Lakhead	\$ 57,309.00	Tillsonburg	\$ 5,860.00	
Ottawa (C.C.E.)	\$168,414.00	Belleville	\$ 25,771.00	New Liskeard	\$ 5,117.00	
London	\$142,719.00	Kingston	\$ 15,974.00	Burford	\$ 4,033.00	
Lindsay	\$ 30,544.00	Renfrew	\$ 12,717.00	Sutton	\$ 3,505.00	
Simcoe	\$ 26,512.00	Leamington	\$ 10,479.00	Arnprior	\$ 3,478.00	
Peterborough	\$ 24,573.00	Erin	\$ 8,394.00	Delta	\$ 2,921.00	
Galt	\$ 17,308.00	Elmira	\$ 8,116.00	Kinmount	\$ 2,882.00	
Welland	\$ 13,991.00	Owen Sound	\$ 7,654.00	Murillo	\$ 2,798.00	
		Markham	\$ 7,192.00	Bobcaygeon	\$ 2,729.00	
		Rockton	\$ 6,995.00	Orono	\$ 2,505.00	

CENTENNIAL FAIRS

Six societies, namely Wellesley, Fergus, Tiverton, Tillsonburg, South Mountain and Brussels celebrated the fact that they had been in operation for at least a century. Each qualified for a centennial grant by erecting a gateway to the fairgrounds. Appropriate ceremonies marking the occasion were held in each instance. Displays of antiques, depicting pioneer conditions, were featured and drew much favourable comment.

Brussels held a religious service in co-operation with local churches and community organizations on the Sunday preceding the fair. For their centennial fair Fergus had the Hon. Leslie Frost as their guest speaker, while Mountain had Mrs. Jean Casselman, M.P. speak at their centennial fair.

WOMEN IN FAIR ACTIVITIES

Most fairs in Ontario owe much of their success to the efforts of the women members. Home Departments have been growing rapidly and at some fairs the work of the ladies outshines that of the men. Seventy-nine Societies had lady secretaries and quite a number of fairs are electing women on the board of directors.

Women's Institutes and women's organizations have been most helpful in the promotion of fair work in their respective communities. It is encouraging to note the splendid program being carried on by societies in co-operation with these community groups.

One hundred and fifty societies report that they had displays at their fair by women's organizations. Chesley and Campbellford each had 19, Simcoe 18, Milton and Orangeville 17. Those having 10 to 16 inclusive were: Merlin, Almonte, Lindsay, Brighton, Shannonville, Kingston, Brampton, Collingwood, Barrie, Listowel, Cookstown, Norwood, Paris, Caledonia, Belleville, Thedford, Perth, Beamsville, Orillia, Owen Sound, Tavistock, Picton, Stratford and Huntsville.

4-H AGRICULTURAL AND HOME MAKING CLUBS.

Fair boards have co-operated with the Agricultural Representative, Home Economist and club leaders in support of the 4-H Club program.

Four hundred and twenty-one of the 726 Agricultural Clubs were sponsored by Agricultural Societies. More than half were Calf Clubs.

BREED SHOWS:

Sheep

		Number of Animals		Cl	ows	
	County or		No.			No.
Cattle	Regional	Fair	Animals	No.	Fair	Animals
Black & White	42	Waterloo	207	1	Peterborough	212
Red & White	14	Central Ontario	98	2	E. Ontario Ottawa	123
Jersey	15	Ottawa Valley	118	2	W. Ontario London	199
Shorthorn	8	Ottawa Valley	97			
D.P. Shorthorn	1	Peterborough Dist.	54	3	W. Ontario	92
Guernsey	11	Niagara District	108	1	Erin	77
Hereford	7	Owen Sound	86	3	Markham	75
Aberdeen-Angus	3	Beaverton	91			
Red Poll	1	Georgian Bay	43			
		Ottawa	78			
		Markham	285			
Swine	6					

COMMERCIAL FEATURES

One hundred and two Societies had a total of 160 Commercial Feature Displays at their fairs. The products included: hog carcasses, market lambs, feeder cattle, baby beef, potatoes, eggs, poultry, hay, grain, tobacco, fruit, honey, maple syrup, cheese, vegetables and wool.

First Co-Operative Packers, Barrie, again supplied bacon hog carcasses from hogs consigned by producers in the area for display purposes at a number of fairs in the Georgian Bay district.

FIELD CROP COMPETITIONS

Туре	Number of Competitions	Number of Competitors
Oats	109	1,533
Barley	10	113
Potatoes	8	89
Wheat	8	115
Corn	71	1,102
Beans	2	20
Farmstead Improvement	2	33
Hay	14	212
Turnips	1	14
Pasture	13	152
Sugar Beets	1	15
Tobacco	1	23
	240	3,421

Comparison with Other Years

	1956	1957	1958	1959	1960	1961
Number of Competitions	259	272	265	272	243	240
Number of Competitors	3,818	4.244	3,661	3,795	3,509	3,421

Pasture Competitions are being encouraged and much assistance in their organization has been given societies by the Agricultural Representatives and the Crop Improvement Associations.

Ripley again led all societies with eight competitions and 108 entries.

IMPROVEMENTS TO GROUNDS & BUILDINGS

Reports from fair board secretaries indicate societies are taking every advantage of the Department's capital grant policy as an aid in financing much needed improvements to property, including new buildings. A & B Fairs can also claim assistance from the Canada Department of Agriculture.

New buildings, some of which were designed for use as community centres as well as fairs, erected during the year include: Schomberg (Skating Arena); Norwich (Legion Hall); Minden (Curling Rink); Acton (Hall & Arena); Petrolia (Hall & Arena); Rockton (General Exhibits); Paris (Curling Rink); Thedford

(Scout Hall); Glencoe (Arena).

Kinmount - cattle; Merlin - 4-H Club calves; Strathroy - horses; Orangeville - horses; Newington - cattle; Burks Falls - horses; Napanee - cattle; Atwood - cattle; Paris - horses; Chesterville - horses; Aylmer - poultry; Perth - cattle; Mitchell - hogs; Lakehead - cattle; Beamsville - cattle; Picton - horses; Burford - cattle.

Arnprior, McDonalds Corners and Cobden built dining halls. Meaford, Oro, Shedden, Brigden, Sutton, Emo, Dresden, Embro and Bobcaygeon, erected new buildings.

Elmira built a new grandstand which cost \$70,000.00 and are now planning to erect an Agricultural and Curling Rink Building and to have it in readiness for their 1962 fair.

Metcalfe added a new judge's stand to their grounds. Manitowaning, Kinmount, Spencerville, New Hamburg, Beachburg, Erin and Shedden installed additional facilities for water supply.

Twenty-five societies did considerable painting - Port Perry, Maxville and Roseneath had the exterior of all buildings painted. Others reporting as having done considerable painting are: Binbrook, Walkerton, Ohsweken, Renfrew, Sundridge, Norwich, Trout Creek, Lansdowne, Navan, Beaverton, Tara, Tiverton, Richmond, Grand Valley, Leamington, Caledonia, Belleville and Peterborough.

Twenty-one societies made additions to their hydro service, while others did considerable renovation to the grounds such as levelling, adding fill, tile drainage and paving.

Thirty societies included new fences in their improvement program. In most instances the link-wire type was used.

Renovation of buildings was not overlooked. Galt did a very creditable job on a brick building to house exhibits and renovated their exhibits building.

Maxville greatly improved the appearance and value of their livestock buildings.

Eight societies purchased extra land for the holding of their shows. These were: Navan, Wyoming, Aylmer, Orangeville, Bobcaygeon, Almonte, Owen Sound and Newington.

Our three larger exhibitions, namely, Toronto, London and Ottawa each made considerable expenditure under the heading of capital improvements.

The C.N.E. lost one of their main exhibits buildings by fire during the year but a new and better building is now under construction on practically the same site.

Mention should be made of the new Hockey Hall of Fame building which was declared officially open by the Honourable John Diefenbaker during his visit to the 1961 Exhibition.

The C.N.E. also enjoyed the use of the new sheep and swine facilities installed as part of the renovation program currently in effect for the livestock coliseum.

Central Canada Exhibition, Ottawa, reports expenditures under the heading of improvements and major repairs amounting to \$353,905.51. The greater portion of this was on the extension of their grandstand.

Western Fair, London, spent some \$200,000.00 on capital improvements and additions to plant in order to operate their extended harness race meet with pari mutuel wagering. Their 1961 annual report shows that over half a million dollars have been spent on improvements to their buildings and grounds since 1959.

SEED AND SHEAF COMPETITION - C.N.E.

Class 338, Division 1 - Grain & Seed

1.	Armour, Ryerson, Burks Falls Agricultural Society	Burks Falls
2.	Magnetawan Agricultural Society	Magnetawan
3.	North Muskoka Agricultural Society	Huntsville

Class 338, Division 2 - Grain & Seed

	,	
1.	South Renfrew Agricultural Society	Renfrew
2.	Carp Agricultural Society	Carp
3.	Carrick Agricultural Society	Mildmay
4.	North Lanark Agricultural Society	Almonte
5.	Cobden Agricultural Society	Cobden
6.	Arnprior Agricultural Society	Arnprior
7.	Kenyon Agricultural Society	Maxville
8.	Welland Agricultural Society	Welland
9.	Huron Township Agricultural Society	Ripley
10.	South Lanark Agricultural Society	Perth
1.	Carrick Agricultural Society	Mildmay
2.	Armour, Ryerson & Burks Falls Agricultural Society	Burks Falls
3.	Huron Township Agricultural Society	Ripley
4.	Kincardine Agricultural Society	Kincardine
5.	Caledonia Agricultural Society	Caledonia
6.	Durham Central Agricultural Society	Orono
7.	Esquesing Agricultural Society	Georgetown
8.	Kenyon Agricultural Society	Maxville

Societies receive considerable advertising by participating in this project. In addition, they get 40 per cent of the prize money while the other 60 per cent goes to the individual exhibitors.

GOVERNMENT GRANTS - PRIZE MONEY

The maximum provided in the Act is \$1,500.00 except in the case of the C.N.E., Toronto; C.C.E., Ottawa; and Western Fair, London, where the maximum is \$2,500.00. Five of the 56 societies receiving the maximum grant were C Fairs. These were: Perth, Ilderton, Tillsonburg, Navan and Sutton.

Grants were apportioned on the basis of 34.7% of average amount of prize money paid to exhibitors during 1958, 1959 and 1960.

Foods, clothing, handicrafts, art and flowers draw the same percentage grants as livestock, field crops, vegetables, fruit, etc.

During recent years money paid out as prizes for harness racing held in conjunction with fairs has been included for grant. One hundred and twenty fairs held horse racing in 1960. The amount of prizes paid out was \$59,813.26.

SUMMARY OF PRIZE MONEY AWARDED - 1960

Canadian National Exhibition, Toronto		133,232.50
Central Canada Exhibition, Ottawa		47,597.86
Western Fair, London		44,150.75
All Other Fairs	\$	708,954.19
Total	\$	933,935.30

SUMMARY OF GRANTS

Societies receiving under \$400.00	40
Societies receiving \$401.00 to \$600.00	41
Societies receiving \$601.00 to \$800.00	36
Societies receiving \$801.00 to \$1,000.00	30
Societies receiving \$1,001.00 to \$1,499.00	33
Societies receiving maximum of \$1,500.00	56
Societies receiving \$2,500.00	3
(C.N.E., Western Fair & C.C.E.)	

SUMMARY OF OTHER GRANTS

Northern Ontario (Special)	48
Field Crop Competitions	240
Commercial Feature Displays	160
Wet Weather	12
Centennary	6

STATISTICS - 1960 REPORTS

Expenditures for Agriculture (prizes)	\$ 933,935.20
Gate Receipts	\$ 1,820,723.12
Municipal and County Grants	\$ 166,653.47
Legislative Grants (1961) (paid on prize money including races average 1958, 1959,1960).	\$ 209,586.00

CONSTITUTION AND BY-LAWS

It is encouraging to note agricultural societies are giving some thought to the preparation and adopting of a Constitution and By-Laws. Simcoe, Markham and Hanover have reported excellent headway on this project.

ONTARIO ASSOCIATION OF AGRICULTURAL SOCIETIES

At least one meeting was held in each of the 16 Association Districts. District 10 sponsors two meetings a year with excellent success. A few districts called a second meeting to deal with fair dates.

To encourage attendance of delegates in Districts 5 and 10 a Challenge Trophy is awarded.

BOARD MEETINGS

Each Director when elected by his district becomes a member of the Board of the Ontario Association of Agricultural Societies. Four board meetings were held during the year, two of them taking place at convention time. The A & B Fairs and Women's Section were represented on the Board. They also held separate meetings and elected their officers at convention time.

CONVENTION

The King Edward-Sheraton Hotel was the location of the annual convention held in February 1961 with 525 men and 475 women delegates in attendance. In addition to addresses by prominent authorities on fairs and panel discussions and forums, there were exhibits of prize lists, fair pictures and handicrafts.

ESSAY COMPETITION

The Essay Competition is promoted by the Women's Section of the O.A.A.S. at the request of Mrs. Ethel Brant Monture who donated the top prize. It was similar to the one carried on the previous year except the subject was changed to "The Place of Indians in Canadian History".

Pupils in grade schools are eligible to compete. Essays were judged in each district under the direction of the Woman Representative who in turn sent the winning essay to the Secretary for final judging on a provincial basis. Fourteen districts submitted essays. The winner was Miss Jewell Arnott of Cardinal, Ontario. Appropriate prizes were awarded by fair boards and in some instances by Association Districts.

COLORED PHOTOGRAPHIC COMPETITION

for the past six years the Canadian National Exhibition has supported this competition by furnishing substantial cash prizes. The details, including judging, were looked after by this Association.

Entries were not too numerous but societies participating derive much benefit in the way of advertising, also encouragement in the matter of improvements to exhibits, buildings, equipment and grounds.

Class 1 - Open to Class A & B Fairs - Championship - Caledonia Reserve - Markham

11 societies submitting 64 slides

Class 2 - Open to Class C Fairs - Championship - Drumbo Reserve - Brussels

22 societies submitting 131 slides

Junior Championship Class - C.N.E. Shield - Blenheim Township Junior Farmers slide submitted by Drumbo Agricultural Society.

SERVICE DIPLOMAS

Ninety-nine Service Diplomas were awarded by Agricultural Societies. In most instances presentations were made to recipients at special functions.

INSURANCE

The group policy covering societies for public liability and property damage introduced by this Association in 1960 was continued. One hundred and thirty-one societies have joined the plan. A small number of claims occurred and all have been satisfactorily settled.

CANADIAN FAIRS ASSOCIATION

The O.A.A.S. is an associate member of this organization. Several Ontario Fairs are also members and their representatives have and are continuing to serve on the executive. The annual meeting is held in Toronto around Royal Winter Fair time.

INTERNATIONAL ASSOCIATION

Each year Ontario Fairs and Exhibitions are well represented at the annual convention of the International Association held in Chicago. The O.A.A.S. is a member but no representative was appointed to attend the 1961 convention.

PLOWING MATCHES

Competitions in the art of plowing have dotted the countryside of this province each autumn for well over a century. While vast changes designed to speed up operations have taken place in machinery and tillage methods, particularly during the last decade, interest in good plowing is still much in evidence.

Match	es				Entrie	S	
Senior	66	66	64	Tractors	1,587	1,471	1,610
Junior	12	17	10	Horses	247	240	188
Coaching Day	25	13	9		1,834	1,711	1,798
District Matches	2	2	2				

The above table indicates a slight increase in total entries at branch matches and the highest in tractor plowing in the past four years. Tractor entries averaged twenty-five per match while those in horse plowing classe were approximately four.

High Entries		Prize Money			Membership		
Haldimand	71	King & Vaughan	\$	968.00	North Dumfries	339	
Oneida	57	Haldimand	\$	917.00	Blenheim	250	
North Dumfries	54	North York	\$	905.00	Oneida	197	
Essex	53	Brant	\$	886.00	Haldimand	98	
Clarence	53				Essex	89	
Welland	53						
Brant	53						

A total of \$24,765.35 was expended by plowmen's associations in 1961. Most of this was for prizes.

INTERNATIONAL PLOWING MATCH

The Belleville area in Hastings County proved to be an excellent location for the 1961 International Plowing Match and Farm Machinery Demonstration. This, along with the fine weather which prevailed at the match, helped greatly in its success.

For the first time on record the dates were arranged so that the Match would be open on a Saturday. As was expected this brought out many urban people. The attendance for the Saturday was the highest for the four days.

The several hundred acres of land loaned by local farmers made it possible to conduct the usual competitions and demonstrations, to accommodate the parking of cars and to stage the exhibit show in Tented City. The owners despite much inconvenience which they experienced at times were most co-operative. The courtesy and service given by all the farmers involved was greatly appreciated not only by the Ontario Plowmen's Association but the 90,000 visitors who came to enjoy the show.

PRIZE LIST

The list contained 35 classes most of which were supported by donors. Twenty classes were restricted to mounted plows. All junior classes were for mounted plows.

ENTRIES

	Horses	Tractors	Total
October 4	2	59	61
October 5	19	113	132
October 6	18	84	102
October 7	17	114	131
1961 Total	56	370	426
1960	68	370	438
1959	72	460	532
1958	53	424	477
1957	55	482	537
1956	111	487	598
1955	47	564	611

The entries in Tractor Classes were the same as in 1960. There was a slight reduction in the total entries but this occurred entirely in the Horse Classes. The trend over the years has been toward fewer entries. In 1954 the entries recorded at the International were more than double those of 1960 or 1961.

MAYOR'S COMPETITION

This feature was used by the Local Committee to interest urban people to attend the Match. A Challenge was issued by Mayor Haig of Belleville to all mayors in the province. A good number responded and on the day of the competition they were guests of the O.P.A.

The contest was won by Mayor W.A. Forsyth of Owen Sound. He received the Mayor's Challenge Trophy from the donor, J. D. Thomas of Toronto, a past president of the World Plowing Organization.

TENTED CITY

One hundred and ninety Exhibitors and thirty-three Caterers purchased space in Tented City. The number was down somewhat from the previous year but this was expected in view of the location of the Match. The streets were arranged on a four-street plan to suit the dimensions of the field.

OFFICIAL OPENING

The Hon. Alvin Hamilton, Federal Minister of Agriculture, was the guest speaker at the official opening held on October 4th at 2 p.m. He was introduced by the Hon. W. A. Goodfellow, Ontario Minister of Agriculture. Other guests in-

cluded local members of parliament and heads of municipalities. An official luncheon and parade, arranged through courtesy of the Ontario Plowmen's Association, preceded the opening.

LOCAL COUNTIES DAY COMPETITION

A change was introduced in the competition program for local counties day in that some regular classes, open to the rest of the province, were added for the first time. This meant the usual title had to be dropped. In other words, the first day was practically in the same category as the other three except for certain classes being closed to outsiders.

The two classes drawing the most interest were the Ontario Championship and the Wardens'. The latter was a new venture and was promoted mainly by the Local Committee. H. A. Hamilton, Hastings County Warden, challenged all Wardens in Ontario to compete. Seventeen entered with Warden Anson Gerrow Port Perry, the winner. He was awarded a handsome trophy by Mr. John Parrott, Belleville. Runners-up were Warden Mel Hill, Chief of the Mohawks, Deseronto, and Warden A. McDonald, Essex County.

The Ontario Championship Class brought out 14 top plowmen, the winners of which would qualify to enter the 1962 Canadian Championship Competition to be held at Portage la Prairie, Manitoba. Grant Wells of Stouffville and Bill Hostrawser of Malton, won first and second respectively.

The number of entries in the Eaton's of Canada Class was disappointing as only 12 of the 60 or so boys and girls eligible participated. The winner was John Wilson of Norval.

ESSO CHAMPIONSHIP CLASS

This class is open to those winning Esso Specials in Tractor Plowing at branch matches. The main award is a trip to another province in Canada to the two plowmen standing first and second. Wm. Huffman, Hagersville, and George Mitchell, Ayr, were the winners.

Bill Hostrawser, Malton and Bill Simpson, Stouffville, were the 1960 winners of the Esso trip. In June of 1961 they, along with their trip manager, George Hay of Russell, visited Manitoba and while there took part in the Portage la Prairie Match. Both were successful in winning prizes.

INTER-COUNTY COMPETITION

Nine teams were entered in the Inter-County Competition. Two classes were plowed, one of which called for no handling of furrows. Mounted plows only were permitted. The Haldimand County Team, comprised of Wayne Herod, Caledonia and Clayton Hunter, Hagersville, was the winner. Runner up was the York County Team. The winners, along with Mr. Sidney MacDonald, Agricultural Representative, Stirling, will receive a trip to Western Canada.

INTER-SECONDARY SCHOOL CLASS

Eighteen schools entered as compared to ten in 1960. This increase is most encouraging. Possibly one reason for the increase was due to it being staged on a Saturday. Another factor was the interest taken by school boards in the immediate area of the Matchand where a number of coaching classes for secondary school pupils had been held in 1960 and again in 1961. Seven of the eighteen were schools located in Hastings County.

The team comprised of Ken Campbell and Neil Lemery, representing the Waterford District High School, was closely followed by the second place team comprised of two pupils from Caledonia High School - Thos. Hunter, Hagersville and Robt. Robinson, Cayuga. The high team members each received a gold

wrist watch from Canada Packers Ltd., and hold, for one year, the Challenge Trophy, donated by the same firm.

DEMONSTRATIONS

As was the case in 1960 all machinery companies occupying space in Tented City were again afforded an opportunity to demonstrate their equipment in an area set aside from Tented City. The response was excellent and this resulted in a very worthwhile program. Visitors were able to see the machines in which they were especially interested demonstrated without having to walk very far and they turned out in large numbers. Soil was a little too hard for the best work.

HORSE SHOE PITCHING COMPETITION

This feature, introduced at Springfield in 1960, was again repeated. Eight teams representing plowmen's associations competed for the Challenge Trophy donated by Mr. Alex McKinney.

The team that won in 1960 was again the top scorer. It was from Centre and West Simcoe Branch and was comprised of Ell Crawford, Minesing and Oscar Rowe, New Lowell. Runner up was the Durham County Team - Roy McLaughlin, Nestleton and Harold McLaughlin, Burketon.

CBC

The CBC gave great support to the Matchand again staged a broadcast centre with seating for 400 people. A portion of their program during the 4 days was staged from a large platform outside the tent.

UTILITIES

Through the courtesy of the Bell Telephone Company a very efficient local and long distance service was set up. It was in readiness well in advance of the opening and operated smoothly throughout the four days.

Through the area office for Ontario Hydro at Belleville, Tented City was sup-

plied with hydro power.

Imperial Oil Limited supplied free of charge the gas and oil required for the operation of tractors during the period of the Match. A station was again installed at the Tractor Park for the convenience of plowmen and the Tractor Committee.

The Family Herald rendered a great service by printing and distributing daily programmes, also entries and results of the various competitions.

ADMINISTRATION BUILDING

As usual the firm of Peirson Bldgs, Ltd., Peterborough, supplied a very suitable building for an administration office. The firm also used the building for its headquarters, an arrangement which apparently works very well for both parties.

The Provincial Police, under the direction of Inspector A. McDougall of the Belleville Detachment, did a fine job in directing and controlling traffic also in policing the event.

Representatives of the Ontario Fire Marshal's Office were on hand with a fine display and equipped to take care of any fires that might occur.

FARMSTEAD IMPROVEMENT COMPETITION

A very worthwhile contest aimed at improving the farmsteads in Hastings County was promoted during the season with the Agricultural Representative's office at Stirling being the focal point. Excellent support was given by various organizations and municipal councils, also the radio and press.

The Ontario Plowmen's Association donated \$500.00 to the prize list and the Ontario Department of Agriculture provided the services of the judge.

HORTICULTURAL EVENT

An interesting horticultural program and exhibit was included in the 1961 Plowing Match, under the direction of Mr. Russell Gomme, Assistant Director, Agricultural and Horticultural Societies Branch in co-operation with the horticultural societies of Hastings, Frontenac, Northumberland and Prince Edward Counties.

Throughout the four day event members were on hand at the horticultural exhibit to answer garden questions. More than 900 persons from all parts of Canada and abroad who visited the exhibit signed the register. A list of the names was forwarded to appropriate horticultural societies for the purpose of enrolling new members. This exhibit was located in the Hastings County tent and featured evergreens, flowering shrubs, perennials and annuals.

A special flower arrangement program was the horticultural feature on Friday morning. Members demonstrated this popular hobby with many types of arrangements followed by a coloured film on the subject. How to grow and force flowering bulbs in the home was another subject included in the program.

CANADIAN CHAMPIONSHIP CONTEST

The Ontario Plowmen's Association was pleased to act as host to the Canadian Plowing Council and co-operate with that body in staging the Canadian Championship Competition. This event has, since its inception, been held in Ontario except for 1960 when it went to the Province of Quebec. Plans are to move to Manitoba for the Match in 1962.

Seven provinces sent teams. One of these, namely Saskatchewan, entered for the first time.

Cyril Heynes of Emerson, Manitoba, had the high score of the fourteen contestants and was declared Canadian Champion. He and Thomas Hickman, Chilliwack, British Columbia, who placed second, will represent Canada in the 1962 World Match in Holland. They will be accompanied by George Fletcher, Merlin, Ontario, who will serve as Coach-Manager for the team.

Grant Wells, Stouffville and Donald Dunkeld, Claremont, Ontario's entry, placed 4th and 6th.

1961 WORLD MATCH

Canada made a remarkable showing in the 1961 World Match in France when Bill Dixon, Brampton, captured the World Championship. His team mate was Albert Raymond of Quebec and they had as their coach-manager J. A. Lafortune of Montreal.

Bill Dixon was awarded the Esso Golden Plow Trophy which he will hold for the year. This is the second time Canada has claimed a World Championship. Jim Eccles, also of Brampton, won the honour in 1953, the year the first World Match was held at Cobourg, Ontario.

INVITATIONS FROM COUNTIES

Preparations are well advanced for the 1962 Match in Grey County. The Norman Barber farm at Owen Sound has excellent facilities and soil conditions should be ideal. The dates are October 10th to 13th inclusive.

Mr. Conn. Smyth's farm at Caledon in Peel County will be the site of the International for 1963. In 1964 the location will be Peterborough in Peterborough County. York County has requested the event for 1965.

HORTICULTURAL SOCIETIES

Another encouraging and successful year has passed for the horticultural societies across Ontario. It was a year of weather surprises for some which handicapped many activities but, considering the numerous projects that have been conducted, it was a year of satisfactory progress.

FLOWER SHOWS

The spring season continued cold and wet for many weeks, consequently many of the early shows of May and June were cancelled. However, the August and September Flower and Vegetable Shows made up for the loss with exceptionally fine entries and an upsurge in the interest in this major event. Many societies held one day shows while the larger centres held two and three day flower shows. Entries varied according to the size of the society, from 200 to 1,600 entries. The support of local firms and the addition of educational exhibits were a distinct asset to many flower shows. This event is an ideal opportunity to inform the residents in the community as to what may be grown in their locality. It is a wonderful advertisement for a horticultural society and therefore should be advertised and promoted to the greatest extent.

DISTRICT MEETINGS

District Meetings were held in 15 of the 16 districts in the province. They were very good meetings and stressed the local problems as well as a review of the activities of the previous year. There was a good attendance as well as increased support by local officials within the district. Attendance varied according to the districts from 75 to more than 300. It was encouraging to observe the numerous educational exhibits and other additions that were set up for these occasions. Some district meetings were held in schools, churches, experimental stations and other public buildings.

Another Photographic Competition was held with 227 entries. The competition included an extra class on Christmas Decorations.

PUBLIC PROJECTS

This important phase of our activities was very successful during the past year. Many societies continued with long term projects which will take many seasons to complete. There were anumber of new public projects started including the landscaping of a senior citizens' home by the Kingsway-Sunnylea Horticultural Society; the beautification of the community approaches by the Thessalon Horticultural Society.

Interest in horticulture by our younger generation has increased noticeably in recent years and it is encouraging to learn of the formation of junior societies in many centres.

MISCELLANEOUS EVENTS

There has been a growing interest in many areas for a course to assist members to become competent flower show judges. During the past year District No. 2 held a judging course for their societies. It was well attended with an average attendance of 33 members from 7 societies. Horticulturists from the Central Experimental Farm and officers in District No. 2 participated in this project. Other areas have indicated interest in a similar course.

Following a committee meeting the Judging Standards Booklet was revised. Many additions were made to the booklet including scoring for fruits and vegetables and rural properties.

EXHIBITS

The Ontario Horticultural Association was advertised extensively at exhibitions and shows during the past year. A large exhibit was set up in the Canadian National Exhibition Horticultural Gardens. Members of societies in the Metropolitan Toronto area acted as attendants at this exhibit.

District No. 3 also did an outstanding job at the International Plowing Match at Belleville. Under the leadership of Mrs. J. S. Shepherdson, an educational exhibit emphasizing the activities of a horticultural society and also a flower arranging and bulb forcing program, was organized. It created a great deal of interest.

The Etobicoke Horticultural Society prepared an exhibit of Junior Handiwork which was set up in a showcase in the Parliament Buildings. Dried flower arrangements were also used in this showcase which were prepared by two members of the Guelph Horticultural Society. The Association also was represented at other major exhibitions and fall fairs during the past year.

YEAR BOOKS

The following societies published year books in 1961: Agincourt, Barrie, Brooklin, Etobicoke, East York, Fort William, Markham, Guelph, Orillia, Oshawa, Oshawa Junior Society, Richmond Hill, Schomber and Unionville.

Many societies were very active in arranging tours to outstanding gardens elsewhere in the province. Motor cavalcades and chartered buses were the means of transportation for these events. In one instance an evening tour of the Parkwood Gardens, owned by Colonel R. S. McLaughlin of Oshawa, and sponsored by the Agincourt Society, snowballed into a turnout of more than 500 horticultural society members from District No. 7, Orillia, Brighton, Brooklin, North York, Unionville and Scarborough Societies.

AWARDS

The Ontario Horticultural Association unanimously approved the following awards for outstanding contributions to horticulture:

Award of Merit Mr. A. Widnall, Fort William, and

Miss M. Castle, Meadowvale.

Silver Medal Mr. Arthur Buckley, Ottawa;

Mr. John A. Weall, Guelph; Mr. R. D. Little, Richmond Hill.

Trillium Pin Miss Gladys Skuffham, Almonte; and

Mrs. Grace Webster, Guelph.

There were also 74 Horticultural Service Diplomas issued for presentation to members by societies.

CONVENTION

The annual convention of the Ontario Horticultural Association was held at Niagara Falls on March 15th and 16th, 1962, and drew a record attendance of approximately 700 delegates.

Features of the program for the two-day event included five panel discussions; addresses on roses, iris, tree diseases and night lighting of gardens.

There were five educational and eleven commercial exhibits set up in the adjoining ballroom and hotel lobby.

GRANTS UNDER THE COMMUNITY CENTRES ACT APRIL 1, 1961 to MARCH 31, 1962

Municipality	Centre	Amount
	ARENAS	
Town of Southampton Twp. of Assiginack Village of Arthur Town of Cochrane Village of Beaverton Twp. of Westmeath City of Cornwall Village of Ripley Town of Tilbury Twp. of Carnarvon	Southampton Manitowaning Arthur Cochrane Beaverton Westmeath Cornwall Ripley Tilbury Mindemoya	\$ 5,000.00 500.00 \$ 1,710.00 \$ 2,090.00 \$ 210.00 \$ 895.00 \$ 5,000.00 \$ 5,000.00 \$ 5,000.00
	Total - 10	\$ 20,650.00
	ARENA AND HALL	
Town of Port Dover Twp. of Wicksteed City of Toronto Twp. of Euphrasia Town of Arnprior Town of Acton	Port Dover Hornepayne George Bell Rocklyn Arnprior Acton	\$ 5,000.00 \$ 65.00 \$ 10,000.00 \$ 250.00 \$ 5,000.00 \$ 10,000.00
	Total - 6 HALLS	\$ 30,315.00
Twp. of Thurlow Twp. of Orillia Twp. of North York Twp. of North York Twp. of Adelaide Twp. of Holland City of North Bay City of North Bay Twp. of Oro City of Ottawa Twp. of Whitney Twp. of Whitchurch Town of St Marys Twp. of Tehkummah Twp. of Rama City of Hamilton Village of Lucknow	Gilead Lake St. George Mitchell Field York Mills - Bayview Craithie Walters Falls Elks Park Kinette Park Jarratt Westboro-Kiwanis Park Whitney Twp. Vandorf Cadzow Park-St Marys South Bay Mouth Longford Mills Hamilton Lucknow	\$ 2,025.00 \$ 385.00 \$ 5,000.00 \$ 5,000.00 \$ 75.00 \$ 135.00 \$ 5,000.00 \$ 5,000.00 \$ 635.00 \$ 685.00 \$ 1,660.00 \$ 200.00 \$ 5,000.00 \$ 5,000.00 \$ 1,670.00
Twps, of Medora & Wood Twp. of Egremont Twp. of Paipoogne Twp. of Douro	Torrance Egremont S.S. # 5 Community Centre Donwood	\$ 3,165.00 \$ 40.00 \$ 2,725.00 \$ 145.00

Municipality	Centre	Aı	mount
HALLS continued			
Twp. of Kitley	Toledo	\$	1,480.00
City of Kingston	Kingston	\$	5,000.00
Twp. of Chapple	Barwick	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	530.00
Twp. of Tiny	Wyebridge	\$	615.00
Twp. of King	Schomberg	\$	4,500.00
Village of Fenelon Falls	Fenelon Falls	\$	155.00
Twp. of Laird	Bar River	\$	170.00
Twp. of Toronto	Lorne Park	\$	75.00
Twp. of Toronto	Malton	\$	3,180.00
Twp. of Carlow	Fort Stewart	\$	85.00
Town of Burlington	Kiwanis Park	\$	5,000.00
Twp. of Rama	Longford Mills	\$	530.00
Twp. of Kinloss	Whitechurch	\$	90.00
Twp. of Innisfil	Churchill	\$	435.00
Twp. of Fauquier	Moonbeam	\$	1,150.00
Twp. of Clarke	Orono	\$ \$ \$	685.00
Twp. of Black River	Val Gagne	\$	230.00
Twp. of Pakenham	Pakenham	\$	460.00
Twp. of East Flamborough	Carlisle	\$	1,215.00
	Total - 40	\$	69,985.00
OUT-D	OOR RINKS		
Village of Victoria Harbour	Victoria Harbour	\$	560.00
Ailsa Craig Public School Board	Ailsa Craig		930.00
Twp. of Oliver	Murillo	\$	265.00
Twp. of Whitney	Whitney Twp.	\$ \$ \$	345.00
Twp. of Mountain	Mountain Twp.	\$	30,00
Sturgeon Falls Separate	St. Joseph & Sacre	Ψ.	
School Board	Coeur School	\$	740.00
Sturgeon Falls Separate	Our Lady of Sorrows	4	
School Board	School	\$	125.00
Sturgeon Falls Separate	20002	4	
School Board	Notre Dame School	\$	635.00
City of Kingston	Kingston		5,000.00
Twp. of Sherborne	Dorset	\$ \$ \$	640.00
Twp. of Otonabee	Riverview	\$	780.00
Town of Burlington	Kiwanis Park	\$	5,000.00
Twp. of Wollaston	Coe Hill	\$	710.00
Twp. of Innisfil	Stroud	\$	160.00
C.R.C.S.S Bigwood	Alban	\$ \$	1,115.00
Twps. of Macdonald, Meredith & Aberdeen Additional	Echo Bay	\$	285.00
	Clairles Davis Divis No. 1	Ф	2 015 00
	Clairlea Park Rink No. 1	(T)	0.010.00
Twp. of Scarborough	Clairlea Park Rink No. 1	\$ \$	3,915.00
	Clairlea Park Rink No. 1 Clairlea Park Rink No. 2 Rayside Twp.	\$ \$	3,915.00 145.00

Municipality	Centre	A	mount
S	WIMMING POOLS		
Village of Shelburne	Shelburne	\$	2,985.00
Village of Thamesville	Thamesville	\$	770.00
Town of Englehart	Englehart	\$	2,330.00
Twp. of North York	Don Mills Collegiate	\$	5,000.00
Town of Port Hope	Port Hope	\$	5,000.00
Town of St. Marys	Cadzow Park-St. Marys	\$	1,820.00
Twp. of Clarke	Orono	\$	1,555.00
City of Windsor	Prince Park	\$	5,000.00
City of Hamilton	Hamilton	\$	5,000.00
City of Welland	Memorial Park	\$	4,067.28
Town of Walkerton	Walkerton	\$	5,000.00
City of St. Thomas	St. Thomas Lions Club	\$	500.00
Village of Cardinal	Cardinal	\$	500.00
City of Chatham	Chatham Jay-Cee	\$	725.00
Twp. of Kitley	Casselman	\$	5,000.00
Town of Ajax	Ajax	\$	5,000.00
Town of Blenheim	Blenheim	\$	5,000.00
Town of Dresden	Dresden	\$	5,000.00
Town of Stoney Creek	Stoney Creek	\$	5,000.00
Town of Paris	Paris	\$	5,000.00
Twp. of Ancaster	Ancaster	\$	5,000.00
Town of Powassan	Powassan	\$	150.00
Town of Burlington	Burlington Mountain Park	\$	5,000.00
Town of Burnington		-	
	Total - 24	\$	85,402.28
	10ta1 = 21	<u>—</u>	
АТ	THLETIC FIELDS	<u>+</u>	
-	THLETIC FIELDS		
Municipality of Neebing	CHLETIC FIELDS West Arthur Street	\$	295.00
Municipality of Neebing Twp. of Saltfleet	CHLETIC FIELDS West Arthur Street Winona	\$	295.00 320.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York	West Arthur Street Winona Amesbury Park	\$ \$ \$	295.00 320.00 5,000.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York	West Arthur Street Winona Amesbury Park Clanton Park	\$ \$ \$ \$	295.00 320.00 5,000.00 5,000.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park	\$ \$ \$ \$ \$	295.00 320.00 5,000.00 5,000.00 805.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park	\$ \$ \$ \$ \$	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park	\$ \$ \$ \$ \$ \$ \$	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 435.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park	\$ \$ \$ \$ \$ \$ \$ \$ \$	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 435.00 4,013.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills	5 5 5 5 5 5 5 5 5	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 435.00 4,013.00 1,015.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 435.00 4,013.00 1,015.00 615.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham Twp. of North York	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square Wigmore Park	999999999999	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 4,013.00 1,015.00 615.00 4,520.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham Twp. of North York Town of Cobourg	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square Wigmore Park Kiwanis Park	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 4,013.00 1,015.00 615.00 4,520.00 5,000.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham Twp. of North York Town of Cobourg Twp. of Roxborough	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square Wigmore Park Kiwanis Park Moose Creek	***************	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 4,013.00 1,015.00 615.00 4,520.00 5,000.00 1,685.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham Twp. of Markham Twp. of North York Town of Cobourg Twp. of Roxborough Village of Arthur	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square Wigmore Park Kiwanis Park Moose Creek Arthur	999999999999999	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 4,013.00 1,015.00 615.00 4,520.00 5,000.00 1,685.00 95.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham Twp. of Markham Twp. of North York Town of Cobourg Twp. of Roxborough Village of Arthur City of North Bay	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square Wigmore Park Kiwanis Park Moose Creek Arthur Amelia Park	999999999999999999	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 4,013.00 1,015.00 615.00 4,520.00 5,000.00 1,685.00 95.00 2,570.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham Twp. of Markham Twp. of North York Town of Cobourg Twp. of Roxborough Village of Arthur City of North Bay City of North Bay	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square Wigmore Park Kiwanis Park Moose Creek Arthur Amelia Park Bourke Park	9999999999999999999	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 4,013.00 1,015.00 615.00 4,520.00 5,000.00 1,685.00 95.00 2,570.00 2,190.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham Twp. of Markham Twp. of North York Town of Cobourg Twp. of Roxborough Village of Arthur City of North Bay City of North Bay City of North Bay	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square Wigmore Park Kiwanis Park Moose Creek Arthur Amelia Park Bourke Park Elks Park	999999999999999999999999999999999999999	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 4,013.00 1,015.00 615.00 4,520.00 5,000.00 1,685.00 95.00 2,570.00 2,190.00 1,815.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham Twp. of Markham Twp. of North York Town of Cobourg Twp. of Roxborough Village of Arthur City of North Bay City of North Bay City of North Bay City of North Bay	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square Wigmore Park Kiwanis Park Moose Creek Arthur Amelia Park Bourke Park Elks Park Kinette Park	000000000000000000000000000000000000000	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 4,013.00 1,015.00 615.00 4,520.00 5,000.00 1,685.00 95.00 2,570.00 2,190.00 1,815.00 2,380.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham Twp. of Markham Twp. of North York Town of Cobourg Twp. of Roxborough Village of Arthur City of North Bay	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square Wigmore Park Kiwanis Park Moose Creek Arthur Amelia Park Bourke Park Elks Park Kinette Park Kinest Park	000000000000000000000000000000000000000	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 4,013.00 1,015.00 615.00 4,520.00 5,000.00 1,685.00 95.00 2,570.00 2,190.00 1,815.00 4,55.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham Twp. of Markham Twp. of North York Town of Cobourg Twp. of Roxborough Village of Arthur City of North Bay	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square Wigmore Park Kiwanis Park Moose Creek Arthur Amelia Park Bourke Park Elks Park Kinette Park Kings Castle Park Kinsmen Park	000000000000000000000000000000000000000	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 4,013.00 1,015.00 615.00 4,520.00 5,000.00 1,685.00 95.00 2,570.00 2,190.00 1,815.00 4,55.00 1,595.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham Twp. of North York Town of Cobourg Twp. of Roxborough Village of Arthur City of North Bay	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square Wigmore Park Kiwanis Park Moose Creek Arthur Amelia Park Bourke Park Elks Park Kinette Park Kinsmen Park Kiwanis Park	99999999999999999999999999	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 4,013.00 1,015.00 615.00 4,520.00 5,000.00 1,685.00 95.00 2,570.00 2,190.00 1,815.00 2,380.00 455.00 1,595.00 3,140.00
Municipality of Neebing Twp. of Saltfleet Twp. of North York Twp. of North York Twp. of E. Gwillimbury Town of Richmond Hill Town of Richmond Hill Twp. of North York Town of Richmond Hill Twp. of Markham Twp. of Markham Twp. of North York Town of Cobourg Twp. of Roxborough Village of Arthur City of North Bay	West Arthur Street Winona Amesbury Park Clanton Park East Gwillimbury Heights Park Lennox Park Town Park Melgate Park Skopit Park-Elgin Mills Victoria Square Wigmore Park Kiwanis Park Moose Creek Arthur Amelia Park Bourke Park Elks Park Kinette Park Kings Castle Park Kinsmen Park	000000000000000000000000000000000000000	295.00 320.00 5,000.00 5,000.00 805.00 1,465.00 4,013.00 1,015.00 615.00 4,520.00 5,000.00 1,685.00 95.00 2,570.00 2,190.00 1,815.00 4,55.00 1,595.00

Municipality	Centre	Ar	nount
ATHLETIC FIELDS continued			
Town of Prescott	Prescott	\$	790.00
City of Ottawa	Anglesea Square	\$	5,000.00
Twp. of Sandwich South	Cabana Road	\$	260.00
Twp. of Sandwich South	Weston	\$	1,075.00
Twp. of Thurlow	Cannington	\$	885.00
Twp. of Enniskillen	Enniskillen	\$	135.00
City of Peterborough	Peterborough	\$	500.00
Twp. of Emo	Emo	\$	875.00
City of Sudbury	Adamsdale	\$	4,645.00
Village of Stirling	Stirling	\$	1,100.00
Twp. of Moore	Corunna	\$	395.00
Town of Caledonia	McKinnon Park	\$	1,000.00
Twp. of Pickering	Greenwood Park	\$	1,425.00
Town of Fort Frances	East End	\$	175.00
Town of Fort Frances	Rotary Park	\$	245.00
Town of Fort Frances	West End	\$	380,00
City of Sudbury	Speigel	\$	2,575.00
Twp. of Mara	Brechin	\$	1,130.00
Town of Newmarket	Newmarket	* * * * * * * * * * * * * * * * * * * *	1,520.00
Twp. of Egremont	Egremont	\$	90.00
Twp. of East York	Topham Park	\$	5,000.00
Twp. of Gloucester	Rathwell Heights	\$	1,515.00
Twp. of Wilmot	Baden	\$	3,010.00
Twp. of Wolfe Island	Wolfe Island	* * * * * * * * * * * * * * * * * * * *	340.00
Town of Burlington	Lowville	\$	1,195.00
Twp. of East Flamborough	Carlisle	\$	910.00
Town of Newmarket	Haskett Park	\$	1,610.00
Town of Burlington	Central Park	\$	635.00
Town of Burlington	Mountainside Park	\$	140.00
Town of Burlington	Kiwanis Park	\$	985,00
Town of Burlington	Kilbride Park	\$	65.00
Town of Burlington	Strathcona Park	\$	870.00
Town of Burlington	Mohawk Park	\$	40.00
City of Chatham	Chatham Jay-Cee	\$	5,000.00
Town of Elmira	Elmira	\$	1,160.00
Twp. of West Flamborough	Millgrove	\$	595.00
Town of Stoney Creek	Stoney Creek		1,465.00
Twp. of Saltfleet	Fruitland	\$	3,600.00
Twp. of Scarborough	Anson Park	\$	615.00
Twp. of Scarborough	Birchmount Park		315.00
Twp. of Scarborough	Blantyre Park	\$	75.00
Twp. of Scarborough	Bluffers Park	\$	100.00
Twp. of Scarborough	Cedar Brook Park	\$	805.00
Twp. of Scarborough	Clairlea Park	\$	30.00
Twp. of Scarborough	Corvette Park	\$	290.00
Twp. of Scarborough	Densgrove Park	\$	75.00
Twp. of Scarborough	Dunlop Park	\$	45.00
Twp. of Scarborough	Craighton Park	***************************************	270.00
Twp. of Scarborough	Edge Park	\$	155.00
		,	

Municipality	Centre	Aı	mount
ATHLETIC FIELDS continued			
Twp, of Scarborough	Edgewood Park	\$	65.00
Twp. of Scarborough	#401 Park	\$	1,135.00
Twp. of Scarborough	Halbert Park	\$	1,155.00
Twp. of Scarborough	Heron Park	\$	865.00
Twp, of Scarborough	Inglewood Park	\$	30.00
Twp, of Scarborough	Ionson Park	\$	35.00
Twp. of Scarborough	Knob Hill Park	\$	535.00
Twp. of Scarborough	Manhattan Park	\$	65.00
Twp. of Scarborough	Maryvale Park	\$	410.00
Twp, of Scarborough	McGregor Park	\$	505.00
Twp. of Scarborough	Sandown Park	\$	80.00
Twp. of Scarborough	Wayne Avenue Park	\$	45.00
Twp. of Scarborough	Wexford Park	\$	270.00
Stittsville Public School Board	S.S. #12 Goulburn-Stittsville	\$	310.00
Town of Powassan	Powassan	\$	385,00
Twp. of Toronto	A.& B. Crookes Park	\$	3,250.00
Twp. of Toronto	Ridgewood Park	\$	135.00
Twp. of Toronto	Applewood Park North	\$	415.00
Twp. of Toronto	Applewood Park South	\$	960.00
Twp. of Toronto	Delwood Park	\$	5,000.00
Twp. of Toronto	Fairview Park	\$	1,205.00
Twp. of Toronto	Meadowwood Park	\$	305.00
Twp. of Toronto	Serson Park	\$	5,000.00
Twp. of Toronto	Victory Park	\$	680,00
Twp. of Toronto	Westacres Park	\$	1,905.00
Twp. of Toronto	White Oaks Park	\$	5,000.00
Durham County District	Victoria Street Recreation	Ψ.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
High School Board	Area	\$	1,285.00
City of North Bay	Community Memorial		
City of North Bay	Stadium	\$	1,755.00
City of North Bay	Chippewa Creek	\$	140.00
City of North Bay	Police (Victoria)	\$	810.00
Twp. of Maryborough	Moorefield	\$	120.00
Town of Harriston	Harriston & Minto	\$	1,125.00
City of Sudbury	Cedar Park	\$	2,720.00
Twp, of Trafalgar	Hornby	\$	995.00
Twp. of Trafalgar	Palermo	\$	1,100.00
Village of Madoc	Madoc	\$	380.00
Twps. Macdonald, Meredith &	Echo Bay	\$	20.00
Aberdeen Addition	2010 2009	т	
Twp. of Rayside	Ray arde. Twp.	\$	61.00
Municipality of Neebing	West Arthur Street	\$	225.00
	(Fi William)		
	111	¢1	13 119 00
	- 111	\$1	43,119.00

Total Paid in Grants	Arenas	\$ 20,650.00
	Arena & Hall	\$ 30,315.00
	Out-Door Rinks	\$ 25,295.00
	Swimming Pools	\$ 85,402.28
	Halls	\$ 69,985.00
	Athletic Fields	\$143,119.00
		\$374,766.28

Co-operatives Branch

The Co-operatives Branch was organized and instituted within the Department on August 1, 1961. In addition to a general mandate of assistance to agricultural co-operatives, the administration of regulations under the Co-operative Loans Act was assigned to this Branch.

Early work of the Branch consisted mainly of preparation of lists of existing co-operative associations in the Province which is to be used as basic information to a survey or census of co-operatives which will be undertaken by the Branch in 1962-63.

Under the Co-operative Loans Act, loans may be made to agricultural co-operatives to assist them in financing capital expenditures for facilities for grading, packing, storing, drying, processing or marketing of farm products.

During the year ended March 31, 1962, thirteen loans totalling \$538,300 were approved by the Co-operative Loans Board as follows:-

Ilderton-Middlesex Farmers' Co-operative -	Feed Mill -	\$50,000.00
Comber Farmers Co-operative Incorporated -	Grain Elevator -	\$75,000.00
Tilbury Farmers' Co-operative -	Grain Elevator -	\$30,000.00
Prince Edward County Fruit Growers		
Co-operative Limited -	Cold Storage -	\$33,500.00
Wiarton District Co-operative Incorporated -	Feed Mill -	\$25,000.00
South Wellington Co-operative -	Feed Mill -	\$55,000.00
Georgian Bay Fruit Growers' Limited -	Cold Storage -	\$12,800.00
Stratford District Co-operative Incorporated -	Feed Mill -	\$70,000.00
Ontario Tree Fruits Co-operative Limited -	Packing Plant -	\$35,000.00
Hensall District Co-operative Incorporated -	Feed Mill -	\$37,000.00
Beaver Valley Growers' Co-operative -	Feed Mill -	\$35,000.00
North Wellington Co-operative-	Feed Mill -	\$30,000.00
New Dundee Co-operative Creamery Limited -	Cheese Factory -	\$50,000.00

In 1961 there were nine such loans totalling \$243,000 and at the end of the fiscal year, 1962, there were outstanding through loans and guaranteed bank credits to 96 co-operatives \$2,970,712 compared to \$2,748,342 to 93 co-operatives at the end of the fiscal year, 1961.

Dairy Branch

The Dairy Branch is responsible for the administration and enforcement of The Milk Industry Act, The Oleomargarine Act, The Edible Oil Products Act and the dairy products regulations under The Farm Products Grades and Sales Act.

The personnel of the Dairy Branch work for the improvement of all segments of the dairy industry within the province.

The Director of Dairying is responsible for the co-ordination and supervision of the personnel in the administration of the various acts.

The Milk Industry Board, under The Milk Industry Act, is the decision making authority and is responsible for its enforcement.

The Dairy Branch operates under two main divisions - Fluid Milk and Milk Products; each administered by a Director. In the field the province is currently divided into thirty districts, each supervised by a senior fieldman. There are seven fieldmen responsible for the cheese industry, sixact as assistant fieldmen, two as inspectors under The Oleomargarine and Edible Oil Products Acts and two working out of Head Office who act as field supervisors and auditors. A Supervisor of Cheese Operations for Eastern and Central Ontario is responsible to the Director of the Milk Products Division. There is a total of 48 men on the Dairy Branch field staff.

The Associate Director of Dairying, while responsible for the full administration in the absence of the Director, is in charge of the development and enforcement of the milk and cream quality program. The Director of the Fluid Milk Division and the Director of the Milk Products Division, in addition to the administration of their divisions, are also responsible for the supervision of the fieldmen in Western and Northern Ontario in the case of the former and in Central and Eastern Ontario in the case of the latter. The Assistant Director acts as Secretary of The Milk Industry Board and assists the division Directors.

THE MILK INDUSTRY ADVISORY COMMITTEE

The Milk Industry Advisory Committee provides a common meeting place for both the processsor and producer groups and as such plays a very important part in the affairs of the dairy industry.

The personnel of the committee was enlarged during the year by the addition of a member respresenting the dairy interests of The Co-operative Union of Ontario.

The committee met three times during 1961.

The members for 1961 were:

Representing the processors: J.R. Anstis, J. Fraser, A.E. Gignac, R. Gildner, K.E. Gordon and J.R. Jackson.

Representing the producers: J. Vandenbosch, W.O. Coon, K. Crews, L. Davis, W. Honey and J.C. Weaver.

Representing the Co-operative Union of Ontario: H.J. Schmidt.

THE ONTARIO MILK PRODUCERS' CO-ORDINATING BOARD

The Ontario Milk Producers' Co-ordinating Board, a body corporate under The Milk Industry Act, provides an official contact for The Milk Industry Board with the dairy producers. It currently consists of five members each from the four official dairy producers' groups in the province representing cream, cheese, concentrated milk and fluid milk. The main purpose of this Board is to co-ordinate the thinking and planning of these four groups, in order to improve the production and marketing of milk and milk products.

THE ONTARIO DAIRY PROCESSORS' COUNCIL

The Ontario Dairy Processors' Council is organized on a similar basis to the Ontario Milk Producers' Co-ordinating Board and its purpose is essentially the same but is not officially provided for in The Milk Industry Act. It is the official contact group for the processors by The Milk Industry Board. Five processor groups make up the council representing, cheese, butter, concentrated milk, ice cream and fluid milk.

THE FORMULA COMMITTEE FOR FLUID MILK

The Formula Committee were quite active in 1961 in amending the price formula for fluid milk in order that the results will more accurately represent existing conditions. The weight of the Average Weekly Earnings Index was reduced by half and replaced by the Index Number of Employment for Ontario. The base period was also changed to the 1958 and 1959 average.

The current members of the committee are: J.L. Baker, Director of Dairying, Chairman; Dr. H.L. Patterson, Director, Farm Economics and Statistics Branch and Professor Ralph Campbell, Head, Department of Agricultural Economics, Ontario Agricultural College.

EXHIBITIONS AND FAIRS

Personnel of the Branch co-operated and assisted with dairy industry promotion at the Canadian National Exhibition, the Western Fair, Ottawa Winter Fair, Royal Agricultural Winter Fair, Middlesex Seed Fair, North Bay Rotary Fair, as well as several local and county fairs throughout the province.

Annual grants of Two Hundred Dollars each were continued for each of the competitive exhibitions conducted by The Dairymen's Association of Western Ontario, Hamilton; The British Empire Cheese Show, Belleville and The Ottawa Winter Fair.

THE ONTARIO DAIRY PRINCESS COMPETITION

One of the major dairy industry promotion projects continues to be the Ontario Dairy Princess Competition. It is jointly sponsored by the Milk Producers' Coordinating Board, the Canadian National Exhibition and the Dairy Branch.

Competitions at county level have now become major promotion projects in several counties with the local competition being held either during the month of June in large shopping centres or at the major county fair.

Forty county princesses competed in 1961. The winner of the Sixth Annual Competition was Mrs.Catherine South of Peel County. One of the major prizes was a trip to the United Kingdom, courtesy of Pan American World Airways. While in the United Kingdom, Mrs.South represented the Ontario dairy industry.

Mrs. South has been doing an excellent job in promoting the dairy industry, having spoken at several service clubs, as well as numerous radio and television appearances. The Ontario Association of Ice Cream Manufacturers has engaged her for a six week period to assist in promoting their Fresh Strawberry Ice Cream Festival.

MILK MARKETING

Following the report of the three economists engaged by the dairy producers to make a proposal for milk marketing, very little progress was made towards a unified milk marketing program until early in 1961. Since then, the tempo appears to have stepped up and frequent meetings have been held between the executives of the various producers' groups in an earnest attempt to develop a unified milk marketing plan for presentation to the milk and cream producers of the province for their consideration.

PUBLICATIONS

The Dairy Publications Sub-Committee of the Department of Agriculture reviews in collaboration with the industry, the dairy publication and bulletin needs. The committee includes representatives from the Department of Dairy Science, Ontario Agricultural College, and the Dairy Division, Kemptville Agricultural School.

RESEARCH

While the Ontario Dairy Research Committee did not specifically function as such during the year, major considerations to research needs were discussed at the meetings of The Milk Industry Advisory Committee.

The Milk Composition Study, which got under way at the Ontario Agricultural College in 1961, had been strongly supported by this committee.

PRESS, RADIO AND TELEVISION

More of the Dairy Branch fieldmen have regular radio programmes on a semimonthly or monthly basis. Several fieldmen have also made appearances on the farm programmes of the local television stations.

There continues to be the closest co-operation between Dairy Branch personnel and the agricultural press, radio and television.

THE MILK INDUSTRY ACT

The amendments made to The Milk Industry Act at the 1961 session of the legislature respecting milk marketing were proclaimed in force on January 30, 1962. Further amendments were also made at the fall session of the legislature which provided for making regulations for fixing the butterfat price differential when purchasing milk and for the collecting of fees for the weighing, grading, selecting and testing of milk and cream.

THE OLEOMARGARINE ACT

The Oleomargarine Act is administered by the Director of Dairying, who is appointed Chief Inspector. All manufacturers and wholesalers are licensed. Close supervision is given to advertising, composition and sale of oleomargarine.

Early in the year considerable difficulty was experienced with illegal oleomargarine coming into the province from Quebec. This product was found to be low in oil content, high in water content and containing colour above that permitted in Ontario.

Five persons were charged during the year for selling, offering for sale and having in possession for sale, oleomargarine which did not comply with The Oleomargarine Act. Convictions were registered against all five persons.

Some 10,898 pounds of illegal oleomargarine were confiscated during the year. Another lot of approximately 20,000 pounds was allowed to be reprocessed, in order to bring it up to legal composition. There were 54 analyses made on oleomargarine samples by the Ontario Research Foundation.

Some trouble was encountered with one firm misrepresenting on the label the kind of oil used in the oleomargarine.

The following is a summary of the inspections made under The Oleomargarine $\mbox{\bf Act}$ during the year:

	1960	1961
Number of towns, cities and villages visited	168	157
Number of manufacturers licensed	10	10
Number of manufacturers inspected	10	10
Number of wholesalers licensed	113	115
Number of wholesalers checked	50	47

Number of wholesalers licensed as result of inspection	8		3	
Number of restaurants inspected	1,488		1,307	
Number of restaurants not using oleomargarine in				
any form	610	41.0%	540	41.3%
Number of restaurants using oleomargarine for cooking	414	27.8%	332	25.4%
Number of restaurants using oleomargarine on toast	108	7.3%	101	7.7%
Number of restaurants using oleomargarine on sandwiches	224	15.0%	212	16.2%
Number of restaurants mixing margarine with butter	132	8.9%	122	9.3%
Number of restaurants not complying with regulations	55		57	
Number of brands of oleomargarine being sold	30		38	
Number of retail outlets checked	1,630		1,667	
Number of moisture tests made	15		27	

THE EDIBLE OIL PRODUCTS ACT

The Edible Oil Products Act is also administered by the Director of Dairying, who is appointed chief inspector. The same inspectors appointed under the Oleomargarine Act are also appointed under this Act.

This Act provides for the licensing of manufacturers and wholesalers of edible oil products designated in the regulations. Two manufacturers and 15 wholesalers were licensed under this Act.

THE MILK INDUSTRY BOARD OF ONTARIO

The Milk Industry Board endeavours to sit for two-day meetings each month and if necessary at more frequent intervals.

Frank Jones, a member of the Board, resigned during the year and George McCague was appointed a member. Other members are Judge A.B. Currey, Chairman, and Gordon Greer. A.P. Clark is Secretary.

The meetings of The Milk Industry Board and activities are as follows:

	1960	1961	
Meetings Held	31	31	
Public Inquiries	1		
Decisions Made	470	542	
Arbitration Hearings re Producer			
Prices and Milk Transportation Rates	2	15	
Awards Made	2	4	

The Board made an award in the Toronto Market which set the milk fat price differential at 5 cent. It had previously been 3-1/2 cents.

Two exhange visits were made between The Milk Industry Board and the Quebec Agricultural Marketing Board to discuss problems of milk marketing as they affect Ontario and Quebec.

The reports of the Fluid Milk Division and the Milk Products Division cover other activities of the Board.

BONDING OF DISTRIBUTORS AND PROCESSORS

The regulations provide that distributors shall furnish security in the form of Government or Surety Bonds, for the protection of milk producers. During the fiscal year ending March 31, 1962, an amount of \$4,896,650.00 in the form of Government and Surety Bonds was on deposit with the Board.

Processing plants which fail to satisfy the Board as to their financial security are also required to furnish security in the form of Government or Surety Bonds. During the fiscal year ending March 31, 1962, five plants furnished security in this form.

HEAD OFFICE FIELDMEN

Two fieldmen work out of Head Office supervising the work of local fieldmen and, in addition, doing audit work which includes investigating the records of fluid milk distributors and other plants to see that producer prices, provided for in the agreements filed with the Board, are paid. Special investigations are also conduc-

ted to gather information on industry matters, required by the Board. Producer and processor association officials are interviewed relative to local market problems.

Statistical data on the work performed for the fiscal year ending March 31, 1962 is as follows:

~ 9	10	CCD	2011	_	**	~ .	
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Payment Audits: Routine and Follow-up	395 16
Errors Corrected: Number	18 \$20,061.31
Investigations	31
Special Plant Calls	84
Miscellaneous Calls: Farm Producer Association Distributor Association Other Calls Office Calls. Meetings with Fieldmen	17 22 10 32 230 96
Mileage Travelled	21,942

CLASSES OF PRODUCERS

Producers of milk and cream have been categorized into their various classes as far as possible and have been related to the approximate amount of milk equivalent produced by each class. The following table places 46.9% of butter as being produced by concentrated milk producers and 53.1% by cream producers.

Number of Producers and Pounds of Milk Equivalent Produced by Same in Ontario

	19	960	1961		
	Producers	Milk	Producers	Milk	
Fluid Milk Concentrated Milk	11,188 21,169	2,125,000,000 1,734,000,000	10,800 18,231	2,162,000,000 1,866,564,000	
Cheese Milk Cream for Butter	10,122 34,157	817,000,000 1,094,000,000	$\frac{10,532}{32,013}$	823,000,000 1,182,374,000	
	76,636	5.770.000.000	71.576	6,033,938,000	

FLUID MILK DIVISION

The fluid milk section, in common with all other sections of the industry, has been faced with many difficult problems during the year. Paramount among these is the marketing of our fluid milk products. The fluid milk producers have been working with producers supplying milk for manufactured milk products to deal with such matters as increasing production of milk and the resulting surpluses and the evolvement of a marketing plan to help improve conditions. In the fluid field, production has been increasing steadily in total and per cow, while on the other hand, the sales of fluid milk products, although showing a small increase annually due largely to increased population shows a decline in the per capita consumption. A real challenge faces the industry to narrow this gap. To this end producers and distributors with the assistance of the Branch have made a

arked improvement in the quality of fluid milk and fluid milk products and have so been mindful of the changing consumer preferences for fluid products contining less butterfat.

TOTAL MILK PURCHASES FROM FARMERS BY COMMERCIAL DAIRIES FOR FLUID SALES

	1960	1961
otal Standard and Special luid Milk Bought (Lbs.)	1,585,249,300	1,598,007,800
rerage Price Per Cwt.	\$5.16	\$5.16
tal Cost	\$81,790,400	\$82,448,800
Ital Standard and Special Scondary Milk Bought (Lbs.)	430,051,800	481,649,900
Perage Price Per Cwt.	\$2.61	\$2.54
Ital Cost	\$11,228,000	\$12,225,400
Otal Milk Bought (Lbs.)	2,015,301,100	2,079,657,700
Ferage Price Per Cwt.	\$4.61	\$4.55
Tital Cost	\$93,018,400	\$94,674,200

FLUID MILK SALES (QUARTS) IN ONTARIO (includes Standard, Special, Partly Skim)

Year	Yearly	Average Monthly	Average Daily
1940	269,164,000	22,430,334	737,435
1944	409,964,000	34,163,666	1,121,499
1949	433,005,000	36,083,750	1,186,315
1954	477,221,800	39,768,483	1,307,457
1959	561,582,900	46,798,575	1,538,583
1960	568,994,400	47,416,200	1,554,629
1961	573,007,500	47,750,625	1,569,883
(From Monthly	Dairy Report,	Ontario Department	of Agriculture)

COMMERCIAL SALES OF FLUID MILK, CREAM, CHOCOLATE DAIRY DRINK AND BUTTERMILK IN ONTARIO, BY YEARS

	Fluid Milk	Fluid Cream	Chocolate Dairy	Buttermilk	Skim Milk
Yar	Quarts	Quarts	Drink - Quarts	Quarts	Quarts
152	433,660,500	13,677,700	14,575,500	5,588,500	18,277,500
1;3	460,402,200	14,714,300	13,848,600	6,501,200	20,740,400
1 14	477,221,800	15,265,800	11,805,900	6,700,800	24,081,800
1 ;5	502,009,400	16,068,200	14,428,500	8,006,200	27,662,100
1 ;6	513,407,625	17,184,509	15,612,300	7,598,500	30,462,800
1 17	535,612,000	17,903,200	15,072,000	8,367,500	34,924,500
118	544,027,600	18,835,900	14,795,700	7,887,800	35,593,800
1'19	561,582,900	19,952,900	17,190,100	8,646,800	36,551,400
1.0	568,001,500	21,134,900	16,683,300	7,443,400	36,669,700
1/1	573,007,500	22,134,400	17,014,000	7,556,900	36,545,200

FLUID MILK PRODUCTS SALES IN PAPER CONTAINERS FOR ONTARIO AND FIVE CITIES FOR THE YEAR 1961 - EXPRESSED AS A PERCENTAGE OF SALES IN THE RESPECTIVE CONTAINER SIZES AND PERCENTAGE OF TOTAL

		HAMILTON %	LONDON %	OTTAWA %	TORONTO %	WINDSOR %	PRO
Standard							
Standard Milk	2 Qt.	35.2	30.4	76.3	41.7	100.0	4
IVIIIK	2 Qt. 1 Qt.		35.0	50.9	30.7	16.0	2
	1 Qt.		68.0	94.4	87.8	63.3	7
	1/2 Pt.		89.5	91.2	91.2	34.3	8
	8 Oz.		09.0	91.4	100.0	04.0	4
	7 Oz.			100.0	100.0		1
	Total Qts.		27.7	49.8	33.4	21.9	2
~	20002			10.	55.2	21,0	
Special	2 04					100.0	
Milk	2 Qt.			10.0		100.0	
	1 Qt.			19.2	0.8	7.7	0
	1 Pt.				38.1		2
	1/2 Pt.			10.9	1.0		
	Total Qts.			19.2	1.3	8.2	
Partly	2 Qt.	38.6	67.4	76.0	29.3	100.0	3
Skimmed	1 Qt.	16.2	24.3	35.3	18.0	7.3	1
Milk	1 Pt.						
	1/2 Pt.		36.5				3
	Total Qts.		18.7	55.1	19.0	17.6	2
Fluid							
Milk	Total Qts.	25.3	25.2	50.4	29.9	21.2	2
Skim							
Milk	2 Qt.	29.2		100.0	24.7	100.0	3
	1 Qt.	13.8	27.2	40.9	18.1	7.1	14
	1 Pt.				85.5		6
	1/2 Pt.		100.0		94.4		9
	Total Qts.	16.5	17.7	48.1	22.0	8.4	1'
Buttermill	k 1 Qt.	46.8	61.2	84.8	52.9	37.5	4
	1 Pt.	95.7		100.0	97.1	90.3	8
	1/2 Pt.		100.0	100.0	95.9		9
	Total Qts.		58.3	84.3	54.8	40.2	5
Chocolate		30.1					
Dairy	1 Qt. 1 Pt.	30.1 94.4	47.2	58.3	43.6	15.8	29
Drink	1/2 Pt.	85.5	78.6 96.9	93.3	92.7	55.8	71
Dillin	8 Oz.		90.9		91.1	85.5	1'
	7 Oz.				100.0		1
	Total Qts.		58.6	72.7	72.2	 26 0	40
					73.2	26.0	
Cereal	1 Qt.	46.6	40.9	88.1	42.9	32.2	4:
Cream	1 Pt.		100.0	88.9	82.1	29.3	63
	1/2 Pt.		100.0	82.4	51.4	26.9	5
	Total Qts.	46.3	35.7	80.0	37.5	23.3	3

9	1 Qt.	31.9	46.4	34.3	39.6	No. 100	25.8
m	1 Pt.	84.7	99.4	55.2	71.1		58.0
	1/2 Pt.	29.3	39.3	64.6	42.9	600 600	31.7
	Total Qts.	31.9	40.8	41.6	37.4		28.5
ping	1 Qt.	7.5	16.6	60.8	9.9	47.1	14.9
m	1 Pt.	77.2		42.8	9.1	37.5	21.6
	1/2 Pt.	41.2	49.0	76.6	72.0	40.8	44.1
	Total Qts.	22.5	36.9	64.0	45.4	40.9	32.4
Cre	am						
	Total Qts.	40.4	58.5	99.6	41.9	30.1	38.6
Cr	eam						
	Total Qts.	38.3	39.6	68.6	38.2	25.7	35.0

SALES OF MILK AND CREAM IN THE PROVINCE OF ONTARIO BY TYPE OF CONTAINER EXPRESSED IN QUARTS, FOR THE YEAR 1961

Quarts Of Total Paper Glass rd Milk Gals. 22,155,864 4.6 100.0 2				Percentage	Percen	tage in
3 Qt. 26,384,892 5.5			Quarts	of Total	Paper	Glass
2 Qt. 68,023,304	rd Milk	Gals.	22,155,864	4.6	~ ~	
2 Qt. 68,023,304		3 Qt.	26,384,892	5.5		100.0
1 Pt. 10,040,571		2 Qt.	68,023,304	14.1	45.2	54.8
1 Pt.		1 Qt.	345,619,468	71.9	24.7	75.3
1/2 Pt.			10,040,571	2.1	72.5	27.5
Total Qts. 481,023,771 100.0 27.0 73.0 I Milk Gals. 49,860 0.6 100.0 2 Qt. 47,974 0.6 2.7 97.3 I Qt. 7,538,717 96.4 3.7 96.3 1 Qt. 733,980 1.7 21.5 78.5 1/2 Pt. 46,188 0.6 2.6 97.4 704 0.6 2.6 97.4 70.0 704 0.6 2.6 97.4 70.0 704 0.6 2.6 97.4 70.0 704 0.6 2.6 97.4 70.0 704 0.6 2.6 97.4 70.0 704 0.6 2.6 97.4 70.0 70.0 70.0 70.0 70.0 70.0 70.0 7		1/2 Pt.		1.6	80.1	19.9
Total Qts. 481,023,771 100.0 27.0 73.0 I Milk Gals. 49,860 0.6 100.0 2 Qt. 47,974 0.6 2.7 97.3 1 Qt. 7,538,717 96.4 3.7 96.3 1 Pt. 133,980 1.7 21.5 78.5 1/2 Pt. 46,188 0.6 2.6 97.4 Total Qts. 7,821,698 100.0 3.9 97.1 Skimmed Milk Gals. 1,786,276 2.1 100.0 2 Qts. 31,122,978 37.0 36.9 63.1 1 Qt. 36,022,427 42.8 19.6 80.4 1 Pt. 148 0.0001 100.0 1/2 Pt. 32,026 0.04 32.6 67.4 Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 Gals. 785,768 2.1 100.0 1/2 Pt. 30,026,034 36.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,94,468 92.5 49.9 50.1 1 Pt. 69,94,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8		8 Oz.	33,532	0.01	49.2	50.8
Total Qts. 481,023,771 100.0 27.0 73.0 I Milk Gals. 49,860 0.6 100.0 2 Qt. 4,779 0.1 100.0 2 Qt. 47,974 0.6 2.7 97.3 1 Qt. 7,538,717 96.4 3.7 96.3 1 Pt. 133,980 1.7 21.5 78.5 1/2 Pt. 46,188 0.6 2.6 97.4 Total Qts. 7,821,698 100.0 3.9 97.1 Skimmed Milk Gals. 1,786,276 2.1 3 Qts. 31,122,978 37.0 36.9 63.1 1 Qt. 36,022,427 42.8 19.6 80.4 1 Pt. 148 0.0001 100.0 1/2 Pt. 32,026 0.04 32.6 67.4 Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 Wilk Gals. 785,768 2.1 3 Qts. 1,302,483 3.6 100.0 2 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 wilk Gals. 171,682 2.3 100.0 1/2 Pt. 99,460 4.0 88.0 12.0 1/2 Pt. 99,460 4.0 88.0 12.0 1/2 Pt. 99,460 4.0 88.0 12.0		7 Oz.			18.4	81.6
3 Qt. 4,779 0.1 100.0 2 Qt. 47,974 0.6 2.7 97.3 1 Qt. 7,538,717 96.4 3.7 96.3 1 Pt. 133,980 1.7 21.5 78.5 1/2 Pt. 46,188 0.6 2.6 97.4 Total Qts. 7,821,698 100.0 3.9 97.1 Skimmed Milk Gals. 1,786,276 2.1 3 Qts. 15,198,219 18.1 100.0 2 Qts. 31,122,978 37.0 36.9 63.1 1 Qt. 36,022,427 42.8 19.6 80.4 1 Pt. 148 0.0001 100.0 1/2 Pt. 32,026 0.04 32.6 67.4 Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 Wilk Gals. 785,768 2.1 3 Qts. 1,302,483 3.6 100.0 2 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 Cmilk Gals. 171,682 2.3 4 Qts. 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8			, ,			
2 Qt.	l Milk	Gals.	49,860	0.6		-
1 Qt. 7,538,717 96.4 3.7 96.3 1 Pt. 133,980 1.7 21.5 78.5 1/2 Pt. 46,188 0.6 2.6 97.4 Total Qts. 7,821,698 100.0 3.9 97.1 Skimmed Milk Gals. 1,786,276 2.1 3 Qts. 15,198,219 18.1 100.0 2 Qts. 31,122,978 37.0 36.9 63.1 1 Qt. 36,022,427 42.8 19.6 80.4 1 Pt. 148 0.0001 100.0 1/2 Pt. 32,026 0.04 32.6 67.4 Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 Gals. 785,768 2.1 3 Qts. 1,302,483 3.6 100.0 2 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 milk Gals. 171,682 2.3 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8		3 Qt.	4,779	0.1		100.0
1 Pt. 133,980 1.7 21.5 78.5 1/2 Pt. 46,188 0.6 2.6 97.4 Total Qts. 7,821,698 100.0 3.9 97.1 Skimmed Milk Gals. 1,786,276 2.1 100.0 2 Qts. 31,122,978 37.0 36.9 63.1 1 Qt. 36,022,427 42.8 19.6 80.4 1 Pt. 148 0.0001 100.0 1/2 Pt. 32,026 0.04 32.6 67.4 Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 Milk Gals. 785,768 2.1 3 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 Milk Gals. 171,682 2.3 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8		2 Qt.	47,974	0.6	2.7	97.3
1/2 Pt.		1 Qt.	7,538,717	96.4	3.7	96.3
Total Qts. 7,821,698 100.0 3.9 97.1 Skimmed Milk Gals. 1,786,276 2.1 100.0 3 Qts. 15,198,219 18.1 100.0 2 Qts. 31,122,978 37.0 36.9 63.1 1 Qt. 36,022,427 42.8 19.6 80.4 1 Pt. 148 0.0001 100.0 1/2 Pt. 32,026 0.04 32.6 67.4 Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 Milk Gals. 785,768 2.1 3 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 milk Gals. 171,682 2.3 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8			133,980	1.7	21.5	78.5
Skimmed Milk Gals. 1,786,276 3 Qts. 15,198,219 18.1 100.0 2 Qts. 31,122,978 37.0 36.9 63.1 1 Qt. 36,022,427 42.8 19.6 80.4 1 Pt. 148 0.0001 100.0 1/2 Pt. 32,026 0.04 32.6 67.4 Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 Wilk Gals. 785,768 2.1 3 Qts. 1,302,483 3.6 100.0 2 Qts. 4,933,952 13.5 3 0.9 69.1 1 Qt. 28,987,264 79.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 Pmilk Gals. 171,682 2.3		1/2 Pt.	46,188	0.6	2.6	97.4
3 Qts. 15,198,219 18.1 100.0 2 Qts. 31,122,978 37.0 36.9 63.1 1 Qt. 36,022,427 42.8 19.6 80.4 1 Pt. 148 0.0001 100.0 1/2 Pt. 32,026 0.04 32.6 67.4 Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 101.0 22.1 77.9 20.0 101.0 10		Total Qts.	7,821,698	100.0	3.9	97.1
2 Qts. 31,122,978 37.0 36.9 63.1 1 Qt. 36,022,427 42.8 19.6 80.4 1 Pt. 148 0.0001 100.0 1/2 Pt. 32,026 0.04 32.6 67.4 Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 Milk Gals. 785,768 2.1 3 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 milk Gals. 171,682 2.3 40.0 Qmilk Gals. 171,682 2.3 40.0 1/2 Pt. 99,460 4.0 88.0 12.0 1/2 Pt. 99,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8	Skimmed Milk	Gals.	1,786,276	2.1		
1 Qt. 36,022,427 42.8 19.6 80.4 1 Pt. 148 0.0001 100.0 1/2 Pt. 32,026 0.04 32.6 67.4 Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 Milk Gals. 785,768 2.1 100.0 2 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 Milk Gals. 171,682 2.3 100.0 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8	!	3 Qts.	15,198,219	18.1		
1 Pt. 148 0.0001 100.0 1/2 Pt. 32,026 0.04 32.6 67.4 Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 Milk Gals. 785,768 2.1 3 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 2,948,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 Emilk Gals. 171,682 2.3 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8		2 Qts.	31,122,978	37.0	36.9	
1/2 Pt. 32,026 0.04 32.6 67.4 Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 Wilk Gals. 785,768 2.1 3 Qts. 1,302,483 3.6 100.0 2 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 Emilk Gals. 171,682 2.3 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8		1 Qt.	36,022,427	42.8	19.6	80.4
Total Qts. 84,162,074 100.0 22.1 77.9 Wilk Total Qts. 573,007,544 26.0 74.0 Iilk Gals. 785,768 2.1 3 Qts. 1,302,483 3.6 100.0 2 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 Imilk Gals. 171,682 2.3 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8		1 Pt.	148	0.0001		100.0
Wilk Total Qts. 573,007,544 26.0 74.0 filk Gals. 785,768 2.1 3 Qts. 1,302,483 3.6 100.0 2 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 milk Gals. 171,682 2.3 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8		1/2 Pt.	32,026	0.04	32.6	67.4
Milk Gals. 785,768 2.1 3 Qts. 1,302,483 3.6 100.0 2 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 milk Gals. 171,682 2.3 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8		Total Qts.	84,162,074	100.0	22.1	77.9
3 Qts. 1,302,483 3.6 100.0 2 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8	Vilk	Total Qts.	573,007,544		26.0	74.0
2 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8	Tilk	Gals.	785,768	2.1		
2 Qts. 4,933,952 13.5 30.9 69.1 1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9			,			100.0
1 Qt. 28,987,264 79.3 14.7 85.3 1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8			, ,	13.5	30.9	69.1
1 Pt. 69,115 0.2 61.5 38.5 1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 milk Gals. 171,682 2.3 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8	1		, ,		14.7	85.3
1/2 Pt. 466,604 1.3 94.1 5.9 Total Qts. 36,545,187 100.0 17.1 82.9 milk Gals. 171,682 2.3 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8			, ,	0.2	61.5	38.5
Total Qts. 36,545,187 100.0 17.1 82.9 milk Gals. 171,682 2.3 1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8					94.1	5.9
1 Qt. 6,994,468 92.5 49.9 50.1 1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8					17.1	82.9
1 Pt. 299,460 4.0 88.0 12.0 1/2 Pt. 91,271 1.2 95.2 4.8	milk	Gals.	171,682	2.3		
1/2 Pt. 91,271 1.2 95.2 4.8		1 Qt.	6,994,468	92.5		
1/2 Pt. 91,271 1.2 95.2 4.8				4.0	88.0	
				1.2	95.2	4.8
					50.8	49.2

Chocolate Dairy Drink	Gals. 1 Qt. 1 Pt. 1/2 Pt. 8 Oz. 7 Oz. Total Qts.	576,118 7,706,686 3,727,022 3,907,303 88,790 1,008,081 17,014,002	3.4 45.3 21.9 23.0 0.5 5.9 100.0	29.9 70.6 76.6 17.8 1.1 46.8	70.1 29.4 23.4 82.2 98.9 53.2
Half & Half Cereal Cream	Gals. 1 Qt. 1 Pt. 1/2 Pt. Total Qts.	1,517,137 7,944,522 805,049 1,151,333 11,418,041	13.3 69.6 7.0 10.1 100.0	42.1 63.1 51.8 38.9	57.9 36.9 48.2 61.1
Table Cream	Gals. 1 Qt. 1 Pt. 1/2 Pt. Total Qts.	794,314 2,875,911 802,021 2,191,569 6,663,815	11.9 43.2 12.0 32.9 100.0	25.8 58.0 31.7 28.5	74.2 42.0 68.3 71.5
Whipping Cream	Gals. 1 Qt. 1 Pt. 1/2 Pt. Total Qts.	165,334 750,024 136,485 1,725,529 2,777,372	6.0 27.0 4.9 62.1 100.0	14.9 21.6 44.1 32.4	85.1 78.4 55.9 67.6
Sour Cream Total Fluid Cream		1,275,215 22,134,443		38.6 35.0	61.4 65.0

SALES OF PARTLY SKIMMED MILK BY COMMERCIAL DAIRIES IN ONTARIO November 1956 to March 1962

Month	Sales (Quarts)	Sales Index Nov. 1956 - 100
November 1956	1,022,700	100
March 1957	1,690,700	165.3
March 1958	2,891,300	282.7
March 1959	3,835,222	375.
March 1960	5,751,381	562.
March 1961	7,065,716	691.
March 1962	9,135,762	893.

PRICE FORMULA FOR FLUID MILK

The Price Formula for Fluid Milk as outlined in Ontario Regulation 343/61 is included in the Collective Bargaining Agreements throughout the Province.

In 1961 under the provisions of the Formula there was no change in price either upward or downward to producers. Accordingly the formula of \$5.10 per cwt. which became effective October 1, 1959, continued in effect. The table hereunder shows the history of the Formula Price since its inception in 1954.

PRICE FORMULA CALCULATIONS

	Formula	a Price	Monthly	3 Mos. Av.	
		3 Mos.	Plus or	Plus or	
Month	Monthly	Average	Minus	Minus	Price
July '54	4.48	4.48			4.53

Sept	255 256 256 256	4.645 4.716 4.7238 4.7463	4.62 4.66 4.69 4.72	.180 955 .193	38	.13 .1655 .1987		4.53 4.53 4.53 4.72
			New Ba	asic Price Ef	fective N	ovember	1,1956 -	4.72
July Aug Sept	. '57	4.8943 4.9286 4.9419	4.89 4.90 4.92	.20	86	.1703 .1866 .2016		4.72 4.72 4.91
			New Ba	asic Price Ef	fective O	ctober 1,	1957 -	4.91
Oct. Sept	'57 :.'59	4.9653 5.1836	4.94 5.15			.0352 .2470		4.91 5.10
			New Ba	asic Price Ef	fective O	ctober 1,	1959 -	5.10
Oct. Mar	'59 '60 '61 '62	5.1659 5.2180 5.1830	5.17 5.19 5.17	958 .108 799 .004	80	.0704 .0958 .0799		5.10 5.10 5.10 5.10
	Damilan	Duaduaan		CENCES ISSUED Milk	Milk	D:	stributor	
Year I	Regular Distributor	Producer Distributor		Transporter	Manufact		p-keeper	Total
1936	647	861	87	177	28			1,800
1937	750	924	87	205	32			1,998
1938	598	850	90	220	36			1,794
1943	610	452	125	181	43			1,411
1948	630	192	86	272	53			1,233
1953 1956 1959	558 532 484	84 65 48	99 54 46	247 251	43		1 1	1,031 903 579
1960	464	38	46				1	549
1961	465	36	35 PROD	UCER PRICE	S		1	537
Mar		Producer A	Agreement Or Award	Mark	et	Produce	_	ement Award
cton	raio		A61-1FM	Beeton	2	4.32	58-2 57-	21FM 10

	Producer	Agreement		Producer	Agreement
Market	Price	Or Award	Market	Price	Or Award
Acton	4,85	A61-1FM	Beeton	4.32	58-21FM
Ailsa Craig	4.81	61-9FM	Belleville	4.93	57-10
Ajax	5,00	61-9FM	Blenheim	4.87	57-32
Alexandria	4.05	A59-4FM	Blind River	5.88	58-31FM
Alfred	4.24	60-31FM	Bloomfield	4.67	57-31
Alliston	5.07	56-2	Blyth	4.81	A59-1
Almonte	4.15	60-33FM	Bobcaygeon	4.24	A60-5FM
Alvinston	4.75	60-19FM	Bolton	4.88	57-33
Ansonville	5.69	60-3FM	Bowmanville	5.00	54-28
Arnprior	5.00	54-28	Bracebridge	5.10	54-28
Arthur	4.81	58-29FM	Brampton	5.00	54-28
Athens	4.24	A60-1FM	Brantford	5.00	A54-2
Aurora	4.97	57-48F	Brigden	5.10	59-1FM
Avlmer	4.62	A60-2FM	Brighton	4.74	58-1F
Bancroft	4.62	59-28FM	Brockville	5.00	54-28
Barrie	5.00	54-28	Brussels	4.81	A59-1
Barry's Bay	4.62	59-29FM	Burford	4.81	59-9FM
Beamsville	5.15	A54-3	Burks Falls	5.10	61-2FM

Producer Agreement Producer Agreement						
	roduce: Price	r Agreement Or Award	Market	Producer	Or Award	
Caledonia	5.12	58-6FM	Glencoe	4.81	58-38FM	
Campbellford	4.81	58-10FM	Goderich	4.81	A59-1	
Capreol	5.69	61-6FM	Gravenhurst	5.10	54-28	
Cardinal	4.24	60-15FM	Grimsby	5.15	57-33	
Carleton Place	4.34	60-16FM	Guelph	5.00	54-28	
Chalk River	5.10	60-30FM	Hagersville	4.69	59-13FM	
Chapleau	6.31	58-30FM	Haileybury	5.40	62-1FM	
Chatham	5.15	A54-5	Haliburton	4.97	59-3FM	
Chatsworth	4.62	59-17FM	Hamilton	5.15	57-33	
Cherry Valley	4.67	57-31	Hanover	4.62	60-13FM	
Chesley	4.81	A57-3	Harriston	4.62	59-15FM	
Chesterville	4.09	59-21FM	Hastings	4.62	58-23FM	
Clinton	4.81	A59-1	Havelock	4.62	58-23FM	
Cobourg	5.00	54-28	Hawkesbury	4.77	58-20FM	
Cochrane	5.74	58-9FM	Hearst	4.70	00-201 W	
Colborne	4.74	58-1F	Hensall	4.81	A59-1	
Coldwater	4.76	59-10FM	Hespeler	5.00	54-28	
Collingwood	5.00	54-35	Huntsville	5.10	54-28	
Comber	4.78	60-20FM	Ingersoll	5.00	A58-2FM	
Cooksville	5.10	54-41	Iroquois Falls	5.69	60-3FM	
Copper Cliff	5.69	61-6FM	Kapuskasing	5.74	60-28FM	
Cornwall	5.00	56-5	Kemptville	4.09	60-17FM	
Cumberland	3.75	30-3	Kemptville	5.19	61-8FM	
Delhi	4.74	60-7FM	Kincardine	4.81	A57-3	
Drayton	4.62	59-15FM	Kingston	5.00	54-28	
Drayton	5.15	A54-5	Kingsville	5.15	A54-7	
Dryden	5.40	59-32FM	Kirkland Lake	5.40	62-1FM	
Dundalk	4.81	59-32FM 59-16FM	Kitchener	5.00	54-28	
Dundas	5.15	57-33	Lakefield	4.69	59-25FM	
Dunnville	4.96	57-33 59-27FM	Lanark	4.00	60-34FM	
Durham	4.81	58-27FM	Lancaster	4.05		
Eganville	5.00	61-12FM	La Salle	5.15	59-30FM 54-6	
Elk Lake	5.40	62-1FM				
Elmira	4.82		Leamington	5.15	A54-8	
Elora	4.81	60-6FM 59-2FM	Levack	5.69 5.00	61-6FM	
	5.40	62-1FM	Lindsay		A61-4FM	
Englehart Erin	4.81	A58-5FM	Lion's Head Listowel	4.81	A57-3 A59-2	
Espanola	5.88				A59-2 58-3F	
Essex	5.15	59-11FM A54-6	Little Current	5.07		
Exeter	4.81		London	5.00	60-26 FM	
	4.24	A59-1	L'Original	4.73	CO OFTE	
Fenelon Falls Fergus	4.82	A60-5FM	Lucan	4.50	60-35FM	
0		59-8FM	Lucknow		A57-3	
Forest Fort Erie	5.10 5.15	58-36 FM	Madoc	4.62	59-19FM	
Fort Frances	5.20	61-3FM 54-1	Markdale	4.77	59-12FM	
Fort William	5.50	A60-3FM	Markham	4.81	58-25FM	
Frankford	4.62	59-19FM	Marmora	4.62	59-19FM	
Galt	5.00	54-28	Massey	5.88	59-11FM	
Gananoque	5.00	54-28 57-3	Matheson	5.62	57-42F	
Georgetown	5.00	54-28	Mattawa	5.19	59-4FM	
Geraldton-Beardmore		53-45	Meaford	5.00	57-27	
deraidion-beardinore	3.60	00-40	Merrickville	4.00	54-29	

Producer Agreement

		Agreement			
Market	Price	Or Award			
Midland	4.81	60-4FM	Renfrew	5.00	54-28
Milford Bay	5.10	58-5FM	Richmond	5.15	58-18FM
Millbrook	4.81	58-32FM	Ridgetown	5.15	A54-5
Milton	5.00	54-28	Ridgeway	5.15	61-3FM
Milverton	4.43	60-23FM	Rockland	3.80	
Mitchell	4.81	A59-3FM	Rockwood	4.60	
Morrisburg	4.19	59-23FM	Russell	4.20	61-4FM
Mount Forest	4.62	60-14FM	St. Catharines	5.15	A54-3
Napanee	5.00	57-7	St. George	5.00	59-14FM
New Hamburg	4.69	60-8FM	St. Jacobs	4.79	58-24FM
New Liskeard	5.40	62-1FM	St. Marys	5.00	54-28
Newmarket	5.00	54-37	St. Thomas	4.81	61-1FM
Niagara Falls	5.15	A54-3	Sarnia	5.10	54-28
Niagara-on-the-1		A54-3	Sault Ste. Marie	5.88	A57-5F
Nipigon	5.69	57-34	Simcoe	4.74	60-7FM
North Bay	5.38	A57-4	Sioux Lookout	5.40	60-1FM
Norwich	4.69	58-33FM	Smiths Falls	4.81	A58-1F
Norwood	4.62	58-23FM	Smithville	4.96	60-36 FM
Oakville	5.15	54-28	Southampton	4.81	A57-3
	4.79	60-21FM	•		
Oil Springs	4.81	A57-6F	South River	5.10	61-2FM
Orangeville	4.95	54-28	Stayner	5.00	54-35
Orillia	4.60		Stirling	4.62	59-19FM
Orono	5.00	60-25FM 55-6	Stoney Creek	5.15	57-33
Oshawa	5.15	A57-1	Stouffville	4.81	58-25FM
Ottawa	5.15		Stratford	5.00	54-28
Owen Sound		A61-3 A57-3	Strathroy	5.00	56-9
Paisley	4.62		Sturgeon Falls	5.38	61-5FM
Palmerston	4.62	59-15FM	Sudbury	5.69	61-6FM
Parham	4.24	59-20FM	Sundridge	5.10	61-2FM
Parkhill	4.81	60-5FM	Sutton West	5.00	58-28FM
Paris	5.00	54-28	Tamworth	4.24	59-20FM
Parry Sound	5.10	A58-3FM	Tavistock	4.24	60-10FM
Pembroke	5.10	54-28	Teeswater	4.81	A57-3
Penetang	4.81	60-4FM	Thamesville	4.86	58-34FM
Perth	4.43	60-11FM	Thessalon	5.88	A57-5F
Peterborough	5.00	54-28	Thornbury	4.81	58-39FM
Petrolia	5.10	54-28	Thorold	5.15	A54-3
Picton	4.67	57-31	Tilbury	5.15	56-8
Plantagenet	4.24	60-9FM	Tillsonburg	4.74	60-7FM
Port Arthur	5.50	A60-3FM	Timmins	5.84	57-21
Port Colborne	5.15	A54-3	Tobermory	4.81	A57-3
Port Dalhousie		A54-3	Toronto		A61-2FM
Port Dover	4.74	60-7FM	Trenton	4.93	58-13FM
Port Elgin	4.81	A57-3	Tweed	4.62	59-19FM
Port Hope	5.00	54-28	Uxbridge	4.81	58-35FM
Port McNicoll	4.81	60-4FM	Vankleek Hill	4.45	A61-5FM
Port Perry	4.81	58-37FM	Verner	5.38	61-7FM
Powassan	5.10	61-2FM	Victoria Harbour	4.81	60-4FM
Prescott	4.81	60-18FM	Wallaceburg	5.15	A54-5
Preston	5.00	54-28	Waterdown	5.15	57-33
Rainy River			Welland	5.15	A54-3

Wellington	4.67	57-31	Windermere	5.10	58-15FM
Westport	4.24	A60-4FM	Windsor	5.15	A54-9
Wheatley	5.15	56-12	Wingham	4.81	A59-1
Whitby	5.00	54-40	Woodbridge	4.99	57-23
Wiarton	4.81	A57-3	Woodstock	5.00	A58-2FM
Winchester	4 00	60-29FM			

MILK PRODUCTS DIVISION

This division supervises the production of milk and cream used for the manufacture of milk products other than fluid milk products, including the three dairy producer marketing plans. The milk and cream quality and farm service extension program is supervised by the Associate Director of Dairying and is reported under that section.

THE DAIRY PRODUCERS' MARKETING PLANS

Three marketing plans operate under The Milk Industry Act, namely The Ontario Cheese Producers' Marketing Plan, The Ontario Concentrated Milk Producers' Marketing-for-processing Plan, and The Ontario Cream Producers Marketing-for-processing Plan. The general activities of the respective local boards operating under these plans are as follows:

CHEESE PRODUCERS' MARKETING PLAN

The Ontario Cheese Producers' Marketing Board operates under this plan. The local board consists of seven members. Each of six districts in the province elects a representative for a three year term, arranged so that each year two districts elect their members. The seventh board member is appointed at large by the six elected representatives.

Since June 26, 1958, the Ontario Cheese Producers' Co-Operative Limited has held a licence as a buyer of cheese, and the regulations were changed at that time to permit this procedure. This organization has purchased cheese on Belleville and Stratford exchanges in the same manner as other licenced buyers during the 1961 season. The Co-Operative purchased approximately eighteen and one-half million pounds of cheese for export to the United Kingdom, with this quantity subject to the results of the regrade. The cheese exchange is located in the head office of The Ontario Cheese Producers' Marketing Board, Belleville, meeting weekly during the summer months and bi-weekly during the winter months.

The Agricultural Stabilization Board announced that the support price of thirty-two cents for cheese would be continued from May 1, 1961 to April 30, 1962, with the twenty-five cents per cwt subsidy payment to be continued on whole milk delivered for manufacturing purposes, exclusive of milk from producers who sold any portion of their milk into the fluid bottled milk market. Because the price for cheese was not changed, the minimum negotiated price of thirty-two cents per pound f.o.b. an approved warehouse under agreement number 59-2MP dated May 12, 1959, continued to operate.

During the grass season, The Ontario Cheese Producers' Co-Operative purchased cheese above the floor price and a high of thirty-five cents per pound was paid during the latter part of the season. Prices declining for November produced cheese at thirty-two and one-half cents and this price continued throughout the winter months of 1962.

The export price to United Kingdom importers was established at thirty cents per pound f.a.s. Montreal, and the Agricultural Stabilization Board paid a four cent rebate on cheese exported to Great Britain. This announcement was made about the first of August 1961 and at the same time the Agricultural Stabilization Board announced that the resale price of cheese to the Canadian Trade would be thirty-three cents per pound. This action stabilized the market to a considerable extent and also improved the price on second grade cheese.

The Dairy Products Division of the Federal Government required that all cheese must be regraded before export to Great Britain but not prior to 60 days after the original grade. Another grading regulation was established whereby cheese must be 21 days old before it would be graded originally. These regulations resulted in more cheese bearing a second grade stamp but fewer complaints were received from domestic and export markets. In prior years the cheese was graded at 10 days of age. Because of this deferred grading, The Ontario Cheese Producers' Marketing Board arranged advanced payments to any plants that requested it so they could pay their producers regularly.

The number of cheese buyers' licences issued in 1960 was 37 and in 1961 35. Regulations under The Farm Products Grades and Sales Act state that grade certificates or statements issued for cheese are valid for 3 months from date of issue.

THE ONTARIO CONCENTRATED MILK PRODUCERS' MARKETING-FOR-PRO-CESSING PLAN

The Ontario Concentrated Milk Producers' Marketing Board operates under this plan as the local board. During the twelve month period April 1st, 1961 to March 31st, 1962 four price agreements were negotiated and four awards were handed down by The Milk Industry Board.

July 1st, Award 61/3MP lowered categorie A from \$2.45 to \$2.35.

August 1st. Award 61/4MP set the price of evaporated and condensed milk packed in cases at \$2.78 per cwt, and concentrated liquid milk at \$3.25 per cwt.

October 1st, Agreement 61/4MP extended existing prices for two months until November 30th, 1961.

December 1st, Agreement 61/5MP extended existing prices for two months until January 31st, 1962.

February 1st, Agreement 62/1MP extended existing prices for a two month period up to March 31st, 1962.

March 20th, Agreement 62/2MP extended existing prices for the month of April. 1962.

In addition to the negotiated price and the award price, producers shipping to a concentrated plant received 25 cents per cwt, federal subsidy.

Award Numbers: Filing Date:	Award 61/1MP Feb. 1,1961	Award 61/2MP May 16,1961	Award 61/3MP July 1,1961	Award 61/4MP Aug. 1,1961
For the manufacture of:				

(a)	Domestic spray and roller powder & butter	\$2.45	\$2.45	\$2.35
(b)	Domestic whole milk roller & spray powder	\$2.70	\$2.70	\$2.70

(b1	Whole milk powder pur- chased by the Stabilization Board of the Federal				
	Government	\$2.60	\$2.60	\$2.60	
(c)	Casein and butterfat	\$2.45	\$2.45	\$2.45	
(d)	Export Whole milk powder and evaporated				
	milk case goods	\$2.50	\$2.50	\$2.50	
(e)	Milk going into all other products	\$2.68	\$2.68	\$2.68	
(f)	Domestic evaporated and condensed milk packed in	**			
	cases	\$2.73	\$2.78		\$2.78
(g)	Concentrated liquid milk	\$3.00	\$3.00		\$3.25

Clauses a, c, and e were subject to the butter escalator clause whereby the minimum price increased or decreased at the rate of 4.2 cents per hundred pounds of milk as the price of butter in Toronto increased from 60 cents per pound. Accordingly the following half monthly changes during 1961-62 were based on the escalator clause made on the minimum prices in the clause affected in the above.

1	u	6	7	
4	U	v	4	

Jan. $1 - 15 \dots 17 \neq increas$	e on	average non-tenderable	butter price of	64.00¢
" 16 - 31 17 ¢	22	77	"	64.00 ¢
Feb. 1 - 1516 ¢	27	29	n	63.85¢
" 16 - 2814¢	27	"	"	63.27 ¢
Mar. 1 - 1513¢	22	22	??	63.03 ¢
" 16 - 31 12 ¢	22	<i>n</i>	"	62.78 ¢
Apr. 1 - 1510 ¢	22	<i>"</i>	n	62.41 ¢
" 17 - 29 8 ¢	27	27	77	61.83 ¢
May 1 - 15 8 ¢	77	27	"	61.87¢
" 16 - 31 8¢	"	27	"	61.87 ¢
June 1 - 15 8¢	27	"	"	61.87 ¢
" 16 - 30 8¢	27	"	"	61.87
July 1 - 15 8¢	22	"	"	61.87
" 16 - 31 8¢	22	27	"	61.87
Aug. 1 - 15 8 ¢	22	27	"	61.87
" 16 - 30 8 ¢	27	22	77	61.87
Sept. 1 - 15 8 f increas	e on	average non-tenderable	butter price of	
" 16 - 30 8.¢	22		<i>n</i>	61.87¢
Oct. 1 - 15 8 ¢	27	<i>"</i>	"	61.87 ¢
" 16 - 31 8 ¢	27	22	"	61.97
Nov. 1 - 15 8¢	27	"	27	61.94 ¢
" 16 - 30 10 ¢	22	"	"	62.44
Dec. 1 - 15 14 ¢	27	"	<i>??</i>	63.42
" 16 - 31 15 ¢	22	"	37	63.50¢
				00.00 4
1962				
Jan. 1 - 1515 ¢	27	27	n	63,50¢
" 16 - 31 14 ¢	27	27	"	63.31 ¢

Feb. 1 - 15 9 ¢	27	27	27	62.22 €
" 16 - 28 8 ¢	27	27	27	61.88¢
Mar. 1 - 15 8 ¢	27	27	27	61.94
" 16 - 31 9 ¢	27	97	29	62 12 4

With support price of butter at 64 cents since May, 1957, the escalator clause has been beneficial to milk prices. Powder prices have declined substantially, however, as prices were lower and stocks increased. During March 1961, sales of powder were reported as low as 8 cents, and later dropped as low as 5-1/2 cents.

During 1961 a local agreement for charges for transportation of milk for processing was made at Aylmer.

CREAM PRODUCERS' MARKETING-FOR-PROCESSING PLAN

The Ontario Cream Producers' Marketing Board operates under this plan as the local board. While a negotiating committee is set up to negotiate minimum prices for cream for processing into butter, it has not yet filed an agreement, although for the past four years has unofficially agreed to a minimum price for first grade fat picked up at the farm at the same price as that set for the floor price on butter.

The 3/10 cent licence fee collected by the group is largely utilized for advertising purposes and to compensate the continuing trend of cream producers diverting to milk shipping, thus lowering the revenue of the board.

PLANT LICENCES

All plants manufacturing milk products which are not designated as fluid milk products require a licence to operate under The Milk Industry Act and the regulations. Also such plants, in addition to meeting all other requirements of the regulations, must satisfy the Board as to their financial responsibility in making payments to producers for milk and cream which they purchased.

All plants which have been issued their licence in 1961 have satisfied the Board as to their financial responsibility.

PLANT LICENCES ISSUED

	1960	1961
Creameries only	125	124
Cheese Factories only	154	146
Processing Plants only	89	96
Milk Receiving Stations only	24	26
Cream Receiving Stations only	6	6
Combined Creameries & Cheese Factories	6	9
Combined Creameries & Milk Separating Plants	2	4
Combined Creameries & Processing Plants	35	26
Combined Creamery & Milk Receiving Station	1	-
Combined Cheese Factory & Processing Plant	3	6
Combined Cheese Factory, Creamery & Processing Plant	7	5
Combined Cheese Factory & Milk Receiving Station	3	3
Combined Cheese Factory & Cream Receiving Station	1	-
Combined Cheese Factory, Cream Receiving Station and		
Processing Plant	1	-
Combined Cheese Factory, Processing, Milk-Separating		
& Milk Receiving Station	1	1
Combined Processing & Milk Receiving Station	1	1

Combined Cheese Factory, Cream Receiving Station and		
Milk Receiving Station	1	1
Combined Cheese Factory and Milk Separating Station	1	-
Combined Cream Receiving Station & Processing Plant	3	1
Combined Cream Receiving Station, Milk Receiving and		
Milk Separating Plant	1	-
Combined Cream Receiving Station and Milk Separating		
Plant	-	-
	465	455

PRODUCTION OF MILK PRODUCTS IN ONTARIO

Total milk production in Ontario increased by 241.625 lbs. over that of 1960. Production of skim milk powder increased approximately 20.8%. Creamery butter volume was higher by 11.3%.

Cheese production increased slightly over that of 1960. Ice Cream production and evaporated milk increased by 3%, and whole milk powder production decreased by 13%.

PRODUCTION STATISTICS

	1960	1961
Creamery Butter	85.396.000 lbs. 66.939.000 lbs. 8.079.000 lbs. 6.903.000 lbs. 7.677.000 lbs.	95.036.000 lbs. 67.079.000 lbs. 7.760.000 lbs. 7.356.000 lbs. 7.878.000 lbs.
CONCENTRATED MILK PRODUCTS		
Condensed Whole Milk Evaporated Whole Milk Powdered Whole Milk Condensed Skim Milk Dry Skim Milk (Spray Process) Dry Skim Milk (Roller Process) Dry Buttermilk Miscellaneous Whole Milk By-Products	13,553.000 lbs. 117.929.000 lbs. 28.552.000 lbs. 1.395.000 lbs. 64.140.000 lbs. 14.415.000 lbs. 3.517.000 lbs.	13.934.000 lbs. 121.858.000 lbs. 24.875.000 lbs. 939.000 lbs. 79.521.000 lbs. 15.364.000 lbs. 4.407.000 lbs.
(including malted milk, partly- skimmed, evaporated milk, etc.) Miscellaneous By-Products (including evaporated skim milk, lactose,	20.269.000 lbs.	21.991.000 lbs.
casein, multi-skim milk, etc.)	11.992.000 lbs.	19.040.000 lbs.

Of the total production in Canada, Ontario produced 57% of the cheese compared with 60% in 1960; 26.8% of the creamery butter compared with 23.6% in 1960; 45.6% of the concentrated milk products compared with 44.7% in 1960 and 36.8% of the ice cream mix compared with 37.4% in 1960.

Some 6.506.246 lbs. of milk were produced in Ontario in 1961 compared with 6.264.621 in 1960.

Ontario produced 33.7% of the total Canadian Milk production, the same as in 1960.

The approximate farm value of the milkused for manufacture, distribution or farm use is as follows:

	1960	1961
Creamery Butter	\$47.361.000	\$51,846,000
Factory Cheese	18.198.000	17.790.000
Other Cheese (Whole Milk)	2.216.000	2.070.000
Cottage Cheese (Creamed)	147.000	175.000
Ice Cream	6.192.000	6.166.000
Concentrated Whole Milk Products	15.884.000	14.843.000
Fluid Sales	95.434.000	95.727.000
Farm Consumed etc	19.213.000	18.636.000
Total Farm Value	\$204.645.000	\$207.253.000

Approximately 92.7% of the total milk production in Ontario is received at the plants.

Milk (including cream converted to milk) produced in Ontario was utilized as follows:

	1960	1961
Creamery Butter	31.8	34.1
Cheddar Cheese	11.9	11.5
Miscellaneous Factory Products	10.5	9.8
Ice Cream	4.2	4.1
Total Factory Products	58.4	59.5
Dairy Butter	0.2	0.2
Fluid Sales	34.2	33.2
Farm-home consumed	3.6	3.3
Fed to Livestock	3.6	3.8

Approximately 46.9% of the milk fat used for the manufacture of creamery butter goes into the plants in the form of milk. This is 2.0% higher than in 1960.

STATISTICAL SUMMARY OF PLANTS MANUFACTURING MILK PRODUCTS INCLUDING MILK AND CREAM RECEIVING STATIONS.

	1960	1961
Total Plants operating	463	439
Creameries making creamery butter	168	158
Cheese Factories	160	162
Processing Plants	132	115
Cream Receiving Stations	16	14
Milk Receiving Stations	30	33
Milk Separating Plants	8	23
Approximate lbs. of butter made from		
milk to plants	38,219,000	44.597.000
	1960	1961
Making cheddar cheese	98	150
Making other types	27	26
Making cottage cheese	90	94
Separating Whey	150	145
Plants making whey butter	68	61
Plants making dry milk	38	38

	Plants making evaporated or condensed milk	16	12
	Plants making ice cream and ice cream mix	149	114
	Plants making casein	3	8
	Plants making miscellaneous products	20	20
	Number of Cream Producers	34.157	32.013
	Number of Milk Producers (Cheese)	10.122	10.532
	Number of Milk Producers (Concentrated)	21.169	18.231
	% Cream Self-delivered	37.10	41.57
	Average per cent fat in cream from producers	33.12	30.36
x)	Average per cent fat in milk	3.55	3.47
	Average pounds milk to make a pound of cheese	11.21	11.20
	Average price first grade cream (milk fat at farm)	63.60 ¢	63.29 ¢
	Average price 100 lbs. milk (cheese) at farm	2.47 ¢	2.41 ¢
	Average price 100 lbs. milk (concentrated) at farm	2.75 ¢	2.66 ¢
	Average price first grade butter (solids)	62.64 ¢	62.50¢
	Average price cheddar cheese per pound	32.94 ¢	33.43 ¢
	Average price evaporated milk per pound case goods	13.33 ¢	13.33 ¢
	Average price dry skim milk per pound (sprayprocess)	9.68 @	8.57 ¢
	Average price dry skim milk per pound (roller process)	8.71 *	7.07 ¢
	Average price dry skim milk per pound (animal feed)	7.40 ¢	5.34
	Average price dry whey per pound	5.19¢	4.58 ¢
	Average price dry buttermilk per pound	7.05¢	5.18¢
	Average price dry casein per pound	23.71 ¢	21.83 ¢
	Average price sweet cream per pound milk fat	84.42 ¢	82.95 ¢

CERTIFICATES FOR BUTTERMAKERS AND CHEESEMAKERS

All plants making butter and cheese in Ontario are required to have a person holding a certificate as a buttermaker in charge of their buttermaking operations, and a person holding a certificate as a cheesemaker in charge of their cheesemaking operations.

BUTTERMAKERS' CERTIFICATES ISSUED

	First Class	Second Class	Temporary	Beginner	Total
1960	160	8	2	21	191
1961	151	8	9	12	180

CHEESEMAKERS' CERTIFICATES ISSUED

	Variety	First Class	Second Class	Temporary	Beginner	Total
1960	10	87	55	10	14	176
1961	19	80	50	9	11	169

QUALITY OF MILK PRODUCTS

Federal grading standards are set up by regulation for butter, cheese and skim milk powder and the largest percentage of these three products is graded. FEDERAL GRADING OF ONTARIO BUTTER

	Total Pounds Graded	% First Grade	% Second Grade	% Third Grade	% Below Third Grade	% Scoring Points or Hig
1960	63.613.304	96.66	3.02	0.20	0.12	22.51
1961	91.916.635	93.36	6.22	0.29	0.13	18.48

97.72% of Ontario butter was graded by federal graders in 1961 compared to 74.74% in 1960. There was a decrease in both first grade and 93 score butter.

Compulsory Federal grading of creamery butter in Ontario became mandatory in 1961 according to regulations under the Farm Products Grades & Sales Act.

FEDERAL GRADING OF ONTARIO CHEESE

	No. Pounds	% First	% Second	% Third	% Below
	Graded	Grade	Grade	Grade	Third Grade
Eastern Ontario	39.634.238	89.22	10.55	0.22	0.01
Central Ontario	15.403.302	93.45	6.32	0.20	0.03
Western Ontario	8.619.192	90.34	9.40	0.26	Ope Side
Northern Ontario	274.740	84.76	15.24		
Totals - 1961	63.931,472	90.37	9.40	0.22	0.02
Totals - 1960	66.772.845	91.62	8.11	0.24	0.03

As the federal government, under the cheese and cheese Factory Improvement Act, pays a quality premium on high scoring cheese at the rate of 1 cent per pound for 93 score and 2 cent per pound for 94 score and higher, the following gives the quality scoring summaries for Ontario cheese in 1960 and 1961:

	%94 Score and higher	%93 Score	%92 Score	% Below 92 Score (Under First Grade)
1960	26.44	38.22	25.10	10.24
1961	25.04	38.14	26.04	10.78

According to cheese grading reports, cheese quality was very similar to that of 1960, with a slight decrease in high scoring cheese and a slight increase in second grade. Some flavour problems were encountered but mechanical defects were lower indicating an improvement in manufacturing technique.

Federal Grading of Edible dry Skim Milk in Ontario.

	Total Pounds	% First	%Second	% Below Second
	Graded	Grade	Grade	Grade
1960	40.618.600	90.7	5.1	4.2
1961	43.874.670	92.0	5.2	

Grading of edible skim milk powder was higher for 1961 compared to 1960, and the percentage of first grade is 1.3% up.

Competition for milk remained keen throughout the 1961 season, despite low powder prices. Little improvement is expected in the powder quality until milk quality is improved. Fieldmen are constantly working on milk quality and results to date are gratifying.

BUTTER QUALITY COMPETITIONS AND EXHIBITION BUTTER

1961 was the 17th consecutive year that these competitions were held and 158 creameries participated, compared to 70 in 1960. The large increase of participating creameries was due to compulsory grading of all butter, and all creameries were automatically entered in the competition.

The competition will increase in value as more creameries take advantage of the yeast and mould service. The Ontario Creamerymen's Association, The Ontario Cream Producers' Marketing Board, and the dairy equipment and supply companies support in this competition.

Supervision of the competition was under the direction of the Milk Products Division of the Ontario Dairy Branch in co-operation with the Department of Dairy Science, Ontario Agricultural College, and the Dairy Division, Canada Department of Agriculture.

The Grand and Reserve Champions in each of the competitions in 1961 were:

1. QUALITY

The Borden Company Limited, Kemptville Palmerston Creamery, Palmerston

2. YEAST AND MOULD

Canada Packers Limited, Walkerton Marshall Dairy, Jarvis

3. WORKMANSHIP

Pembroke Creamery, Pembroke Stacey Bros., Mitchell

4. COMBINED QUALITY, YEAST AND MOULD, AND WORKMANSHIP

Canada Packers Limited, Harriston Marshall Dairy, Jarvis

5. CREAMERIES MAKING THE MOST OVERALL IMPROVEMENT

Clark Dairy Limited, Ottawa U.D.P.C., Renfrew

6. NOVICE COMPETITION

Mohawk Creamery, Brantford Madoc Creamery, Madoc

7. HIGHEST SCORING BUTTER (Cream Receiving Creameries)

Canada Packers Ltd., Fort Frances Palmerston Creamery, Palmerston

8. HIGHEST SCORING BUTTER (Milk Receiving Creameries)

The Borden Company Ltd., Kemptville Ault Milk Products Ltd., Winchester

9. GREATEST INCREASE IN HIGH SCORING BUTTER

(Milk Receiving Creamearies)

Teeswater Creamery Limited, Teeswater Ault Milk Products, Winchester

10. GREATEST INCREASE IN HIGH SCORING BUTTER

(Cream Receiving Creameries)

Clark Dairy Limited, Ottawa Creemore Creamery, Creemore Kingston Creamery, Kingston

11. EXHIBITION BUTTER (Creameries Winning Most Prizes at the

C.N.E. and the Royal)

Puritan Dairy Products, Dunnville Briar's Dairy, Sutton West Ontario Creameries do not appear to be interested in exhibition butter. Only seven competed at the C.N.E. and the Royal in 1960. The other competition for butter was sponsored by the Dairymen's Association of Western Ontario and was held at Hamilton in January, and entries were similar to 1960.

CHEESE COMPETITIONS AND EXHIBITIONS

Major competitive cheese exhibitions were held by the C.N.E., Royal Winter Fair, Ottawa Winter Fair, British Empire Cheese Show, Belleville, and The Dairymen's Association of Western Ontario.

Ontario Cheesemakers again captured high honours at the exhibitions. In addition, Ontario Cheesemakers won major honours in the open classes at the Olympia Dairy Show, London, England, and the Scottish Dairy Show, Glasgow, Scotland. The Major trophy winners in the provincial cheese competitions in 1961 were:

- 1. THE GARNET BAIN MEMORIAL TROPHY awarded to the Cheesemaker's Association whose members made the highest percentage of extraneous matter free cheese:
 - Central Ontario Cheesemaker's Association.
- 2. FRANK HEARNS MEMORIAL TROPHY awarded to the cheesemaker winning the most and highest prizes at the major cheese exhibitions:
 - H. Montgomery, Farmer's Joy Cheese Factory, Monkland, Ontario.
- 3. G.G. PUBLOW MEMORIAL TROPHY awarded to the cheesemaker with the highest rating for plant sanitation and operation:

 James Drew, Rosedale Cheese & Butter, Almonte
- 4. J.P. GRIFFIN MEMORIAL SHIELD awarded to the Cheesemaker's Association making the highest percentage of First Grade Cheese:

 Central Ontario Cheesemaker's Associations.
- 5. JOHN H. ECKLIN MEMORIAL TROPHY awarded to the cheesemaker making the highest scoring cheese in Central or Eastern Ontario: Glen Anderson, Menie Cheese Company, Campbellford

GENERAL

Plants manufacturing milk products have continued to show improvement in equipment and construction. There is still a trend towards consolidation into larger plants. New and modern plants are being constructed to replace old buildings and several are in the process of being remodelled. Four amalgamations were completed during 1961.

The smaller plant is experiencing difficulty in competing under present day conditions. This is particularly true with the small cream receiving creameries.

Manufacturing costs are still increasing in all processing plants, and the cheese industry is still experiencing a great deal of difficulty in obtaining qualified help. The cheesemakers coming from Europe are more experienced in foreign type cheese manufacture and, as a result, there is an increased quantity of this type of cheese being manufactured. This cheese is finding a ready market in Canada. Twenty-six plants are making a variety of fancy cheese.

The quality of milk products has received strict attention by the field staff of the Dairy Branchh. Due to rigid inspection, complaints on cheese exported to the U.K. have been negligible, and a strong demand is anticipated for 1962 Ontario make.

As compulsory butter grading is now being enforced, creamery operators are

paying more attention to grading regulations.

Two cheese factories burned during 1961, and six creameries ceased to operate permanently. Three cheese plants closed permanently during 1961.

Several cheesemakers' clubs, one buttermakers' club, two dairymen's clubs and two milk sanitarians' associations operated in the province during 1961.

Bulk haulage of milk is practised at a number of cheese factories and processing plants throughout the province. No processing plants are 100% bulk haulage, but the larger producers are gradually converting to this type of milk production.

Summary of Activities of Dairy Branch Fieldmen

	1960	1961
Number of fermentation tests made on cheese milk	3.225	2.386
Number of samples of milk tested for milk fat	32.421	24.822
Number of samples of cream tested for milk fat	11.693	8.224
Number of adjustments made	678	521 x)
Number of meetings attended	920	846

x) Figures refer to milk products plants only.

MILK AND CREAM QUALITY

The Dairy Branch has been aware of the need to improve the quality of milk throughout the Province for several years. The quality of all finished dairy products depends greatly on the quality of the milk and cream produced on the farm. Division of responsibility over the years of the quality aspect of the raw product, did not encourage any general improvement in quality.

Supervision of raw milk production for the fluid markets in Ontario in the past has been in the hands of the municipal Departments of Health. Different standards for milk quality prevailed in many areas and in some sections of the Province little attention was paid to quality.

Since 1958, Agriculture has gradually been assuming the responsibility for fluid milk production under an agreement between the Department of Agriculture and the Department of Health. The Department of Health has made a start on assuming responsibility for sanitation of manufacturing plants and Perth and Waterloo Counties are now under their supervision in this regard. This exchange of responsibilities between Agriculture and Health is expected to be completed in 1964.

The following Municipalities came under the supervision of the Dairy Branch in 1961:-

City of Chatham	Halton	Peterborough
Dufferin	Leeds & Grenville	Simcoe
Essex (except Windsor)	Middlesex (except London)	Victoria
Grey (except Owen Sound)		Waterloo (except Galt, Kitchener
Haliburton	Peel	and Waterloo) York (except Toronto)

This program now involves some 38 Counties, or areas, in the Province. Some 30 of our fieldmen are now engaged in supervision of at least some fluid milk production in their area.

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The following Cities and Towns are among the larger centres that have come under the supervision of the department of Agriculture since 1958:

Barrie	Cornwall	North Bay	St. Catharines
Belleville	Fort William	Orillia	Stratford
Brampton	Hamilton	Pembroke	Sudbury
Brantford	Kingston	Peterborough	Timmins
Brockville	Lindsay	Port Arthur	Wellland
Chatham	Niagara Falls	Richmond Hill	Woodstock

It is believed that a more uniform quality of milk will prevail throughout the Province when supervision for the raw product has been assumed by the Department of Agriculture.

The quality of milk being received by manufacturing plants, particularly during the summer months, indicates much work to be done in this field. Responsibility for the grading of milk in both fluid and manufacturing plants is vested in the milk grader who is required to hold a certificate of qualification from the Dairy Branch. Competition between plants did not encourage management to grade milk and although graders had the authority to reject milk, little advantage of the regulations was taken to improve quality.

Since amendments to the regulations were brought in, on July 3, 1961, a more vigorous stand has been taken by the Department of Agriculture in improving the quality of the milk for manufacturing. Enforcement of the grading regulations through more supervision of milk grading at the plant level has been effective.

Pilot programs of submitting milk samples from producers to manufacturing plants to Regional Health Laboratories for bacterial activity tests, were started in the Counties of Perth, Oxford, Renfrew and Brant.

All Dairy Branch fieldmen were requested to give additional supervision to plant grading of milk and to shut off producers of low quality milk where the requirements of the regulations were not met. In addition, the scoring of producer farms and visits to premises of low grade producers were stepped up.

The present field staff is not able to carry out all its responsibilities in connection with the quality program. In order to meet the requests for more farm inspections and the needed improvement in milk quality, additional staff will be necessary.

MILK QUALITY

(1) Flavour

Flavour is the most important characteristic of all milk. Poor flavours are often carried over into the finished product. The milk grader receiving the milk has an important role to play in any quality program.

Cans of Milk Graded For Flavour By Dairy Branch Fieldmen - 1961

	Flavour	Reject
Fluid	43,470	369
Processing	540,845	1,276
Cheese	188,562	1,499

(2) Sediment

Milk graders in all plants are responsible for making regular sediment tests on milk. The lack of adequate testing equipment for bulk tank sediment testing has made it difficult to enforce the regulations in this regard.

Dairy Branch fieldmen supervised the following tests for sediment:-

	Grade A		Grade B		Grade C		Grade D	
	1961 -	1960	1961 -	1960	1961 -	1960	1961 -	1960
Fluid	62.8	57.2	33.2	41.0	2.7	1.4	1.2	0.2
Processing	36.9	38.8	47.6	47.7	10,6	10.5	4.9	3.0
Cheese	35.3	37.1	47.1	4.9	13.2	14.6	4.3	3.4

(3) Bacterial Activity

Dairy Branch fieldmen are responsible for supervision of testing all milk for Bacterial Activity. Bacterial Activity tests for fluid milk are made in Department of Health laboratories. Grade 1 and 2 milk is acceptable for fluid purposes and Grades 1, 2 and 3 are acceptable for manufacturing purposes. A concerted effort is being made by Dairy Branch fieldmen to improve the quality of milk being received at manufacturing plants.

Dairy Branch fieldmen supervised the following tests for bacterial activity:-

	Grad	le 1		de 2		de 3	Grad	de 4
	1961 -	1960	1961 .	1960	1961	1960	1961 -	1960
Fluid	82.5	81.7	9.9	10.8	5.5	5.7	2.2	1.8
Processing	26.1	18.6	20.4	19.7	20.5	22.5	33.1	39.2
Cheese	41.3	43.9	22.0	22.4	17.6	16.9	19.2	16.8

CREAM QUALITY

	%Special Grad	e %1st Grade	%2nd Grade	%Reject Cream
1960	6.16	9.22	2.51	0.11
1961	7.87	88.60	3.44	0.09

FARM VISITS

In an effort to bring farm premises into compliance with the regulations under the Milk Industry Act, and in the interests of improving milk quality, Dairy Branch fieldmen made the following calls on producers. Regulations require producers to be shut off from their market until their milk is acceptable. Shut offs may result where milk is produced under insanitary conditions.

	Total Farm Visits	Shut Offs
Fluid 1961	6,443	156
Processing 1961	2,274	177
Cheese 1961	2,500	29

SCORING OF FARM PREMISES

Dairy Branch fieldmen score producer farms to encourage improvement in conditions under which milk is produced. Premises are classed as A1, A2, A3, B, C, and D.

N	lo. of Farms						
	Scored	A1	Al	A3	В	C	D
Fluid	3210	3.7	31.7	47.2	12.1	4.2	1.1
Processing	1313	0.1	2.9	14.5	31.3	32.7	18.5
Cheese	1586	0.2	2.5	20.1	30.4	26.7	20.1
	No. of Farms Scored		n Or Cle	ole Not ean Or ewashed	No Milk House	Rubber Not Clean	Cooling Not Adequate
Fluid	3210	19	.9 6	3.4	7.0	35.2	8.5
Processing	1313	28	.2 8	3.0	67.6	60.6	73.1
Cheese	1586	35	.3 7	6.6	53.5	62.9	52.0

Fieldmen endeavour to score all fluid milk premises at least once each year. Mention should be made that a larger number of low grade processing and cheese producer farms are scored than is the case with fluid. Staff and time available for scoring allows only low grade producers to be visited.

CERTIFICATES OF MERIT TO PRODUCERS

Certificates of Merit to producers of quality milk were made available to fieldmen again in 1961, for presentation to both fluid and manufactured milk producers.

A total of 468 Certificates were issued in 1961 to deserving producers. As the quality programme progresses it is hoped that other fieldmen will include their producers in such a programme.

PRODUCER MEETINGS

Many producer meetings were held throughout the Province in 1961. These meetings were mainly information meetings concerning -

- (1) The need to improve milk quality.
- (2) How to improve milk quality.
- (3) Regulations.
- (4) Mastitis prevention.

GRADER'S AND TESTER'S CERTIFICATES

All Graders and Testers of Milk and Cream are required to hold a certificate of qualification. Written and practical examinations were held throughout the year to qualify men for certificates.

Total Certificates Issued To Date:

	1959	1960	1961	Total
Milk Graders	325	208	102	1243
Milk Testers	107	112	63	1186
Cream Graders	48	27	24	514

Cream Testers	58	36	40	615
Bulk Tank Milk Graders	122	111	116	496

No. of centres where practical examinations were held -6 No. of candidates participating -267

TRANSPORTATION OF MILK AND CREAM

Fieldmen are expected to report non compliance of milk and cream transports with respect to van bodies and decking boards.

No. of milk and creams transports inspected in 1961 - 291

No. of milk and cream transports reported not	in compliance in	n 1961 - 76
Summary of Quality Checks on Milk and Cream:	1960	1961
No. of cans of cream examined for quality	33,928	25,815
No. of cans of milk examined for flavour	212,275	772,877
No. of cans of milk rejected for flavour and acid	3,170	3,144
No. of cans of milk examined for sediment	50,652	48,054
No. of tests made on milk for bacterial activity	78,209	129,640
No. of cans examined for condition (cream and mil	(k) 95,575	162,504
No. of producers visited	5,680	11,040

REGULATIONS (Quality)

Amendments to the milk and cream quality regulations were filed on July 3, 1961. These amendments have assisted the Dairy Branch and their fieldmen in enforcing the regulations, resulting in an improvement in the milk supply.

PRODUCER MEETINGS

The Associate Director of Dairying attended and addressed 22 producer meetings on the subject of Milk Quality, in 1961.

BULK MILK HANDLING

Increases were again noted in the number of dairies and processing plants which are using bulk milk collecting and which in turn reflected a further increase in the number of producers with farm bulk tanks.

The following table indicates the trend towards bulk milk handling:-

	1955	1959	1960	1961
Number of fluid milk markets having bulk milk handling	. 6	29	48	65
Number of dairies having bulk milk handling	8	56	98	117
Number of processing plants having bulk				
milk handling	-	1	9	13
Number of bulk transports: (a) to dairies (b) to processing	19	190	265	299
plants	-	1	10	14

Number of fluid producers on bulk	453	3752	6191	6636
Number of processing producers on bulk	-	30	149	221
Total producers on bulk	453	3782	6340	6857

BULK MILK TRANSPORT OPERATORS SHORT COURSES

Courses of instruction for the operators of bulk tank trucks transporting milk from the farm to the plant, which commenced in 1955 were continued.

Since 1955, eighteen such courses have been given, 15 of which were held at the Department of Dairy Science, O.A.C., Guelph, 2 at the Kemptville Agricultural School, Kemptville, and one at the Western Ontario Agricultural School, Ridgetown. A total of 522 operators have taken these courses.

The following courses were held in 1961:-

Date	Students
O.A.C. April 17 - 26	41
O.A.C. September 11-20	31

One day refresher courses were held at 16 centres across the province, from October through December, for bulk milk transport operators. 481 operators attended.

Extension Branch

Five services are incorporated in the Extension Branch of the Ontario Department of Agriculture. The Agricultural Representative and the Home Economics Services have personnel working in every county and district in the province. The Agricultural Engineering Extension Service provides specialized assistance in drainage, farm buldings, and machinery. The Fruit and Vegetable Extension Specialists and three Tobacco Extension Specialists are located in areas were production of these groups is concentrated. Through these services the Extension Branch has continued to provide leadership in the various programs designed to promote and improve practices in agriculture and homemaking and assist farm families with the various problems on farms.

Additional training was provided for Extension personnel and three courses in communications were held in different parts of the province. This enabled all the members who had not already taken these courses to attend. Three farm management courses on farm business analysis were conducted for the personnel and results of previous recommendations were assessed. Due to the increased demands being made on the Extension Service in regards to farm management, steps are being taken to develop a co-ordinated approach to the problems facing Ontario farm families. Emphasis is being placed on farm management, junior extension and farm safety, working through the various farm organizations.

FARM SAFETY

Farm Safety Councils are now organized in all counties and districts across Ontario and are carrying out their active programs. The function of the local councils is to initiate safety programs on the local level in an effort to reduce the incidence of farm accidents. The information contained in the Farm Accident Survey has provided a basis for the establishment of projects in that it indicates the most serious problems in each county and district.

Regional Conferences of local councils were held at which there was representation from each local safety council.

The Fourth Provincial Farm Safety Conference was conducted jointly by the Farm Safety Council of Ontario and the Ontario Department of Agriculture. This conference is designed to offer assistance to local safety groups in the development of programs.

AGRICULTURAL REPRESENTATIVE SERVICE

The cool backward weather during late spring and early summer delayed seeding in most counties and districts of the province. The frequent rains continued most of the summer resulting in excellent crops of forage and grains which were difficult to cure and harvest. Lodging of grain was general and a large percentage of the grain harvested was discoloured. Despite this difficulty good yields of both hay and grain were reported and barns were filled to capacity. Western Ontario had one of the best crops of grain corn ever harvested. Many yields of 100 bushels were reported in several counties. Silage corn was an excellent crop and the late fall frost permitted silo filling under ideal conditions. Eastern Ontario had a higher rainfall during August and a percentage of the grain could not be harvested due to the extreme wet land. The dry weather prevalent in the prairie provinces extended into Northwestern Ontario, especially Rainy River District and there was no rain through the spring breakup until the second week in July. Crops in this section were below average and resulted in increased marketing of livestock. Pasture in all other parts of the province were above average and livestock were stabled in good condition.

FARM MANAGEMENT

The Extension personnel have been working continually on crop and livestock improvement which is the basis of farm management. However, the rapid changes taking place in the farming industry have necessitated an accurate record of various farm enterprises in order to improve net earnings. With the 13.7% reduction in the number of farms in Ontario during the last five years, there has been an increasing demand by farmers for guidance in farm budgeting and farm account analysis. A total of 1,013 farm account books were submitted for analysis for the year 1961. Every county and district forwarded farm account books to the Economics Branch, Ontario Agricultural College, and the figures were then interpreted by the Agricultural representative to the respective farmers.

Some 2,944 visits to farms were made by the Agricultural Representative to discuss farm management and 5,629 farmers visited the Agricultural Representative's office regarding farm business management. Over 3,000 farmers attendative to the control of the contro

ed special farm management courses held in the county or district.

In addition, farm account books were supplied to farmers where figures were kept but not analyzed. Summaries of the farm account books were prepared for each county and district which permitted farmers to compare their results with the county average.

LIVE STOCK IMPROVEMENT

Live stock improvement is an important part of the extension program. The Agricultural Representatives work with the breed organizations and in some cases act as Secretary of the county or district club. This provides the Agricultural Representative an opportunity to discuss projects or problems at twilight meetings, barn meetings and field days. Some of the breeder clubs sponsor auction of calves suitable for 4-H club members. This is an excellent medium for young farmers to improve their livestock. A number of Agricultural Representatives also help locate good livestock for 4-H club work and assist with the purchase of these animals.

Better feeding projects are organized in a number of counties with improved pastures and figures are available to improve the value of such projects.

The Agricultural Representative assists with beef bulls on feeding tests and promotes county or district sales. Four feeder cattle sales were held in Northern Ontario and the Agricultural Representative plays a big part in the co-ordination of the different committees and also advertises the sale throughout the province.

The Agricultural Representative works with the Dairy Herd Improvement field-

men and meetings are held to review the results on individual farms.

Meetings are also held with the Artificial Insemination units as well as other programs designed to improve livestock breeding and feeding. The Agricultural Representative co-operates in implementing the various livestock health programs.

SOIL AND CROP IMPROVEMENT

Soils specialists located at O.A.C. Guelph, Kemptville and Ridgetown as well as at regional offices in Lindsay, London, Brighton, and Newmarket provided close liaison between the soils research program conducted at O.A.C. and the soil and crop improvement projects conducted by the Agricultural Representative.

A total of 32 Agricultural Representatives throughout the province are making fertilizer recommendations based on analyses carried out by the Soils Department, O.A.C. In addition, the Fruit and Vegetable and Tobacco Extension Specialists are making fertilizer recommendations for specialized crops in the area in which they are located. These recommendations are based not only on the soil analysis

but on the results obtained on the different crops.

Some 16,884 soil sample reports were received by the Agricultural Representative. With the increasing number of soil sample analysis the Agricultural Representatives have a broad knowledge of the different types of soil requirements in his area and is well equipped to make fertilizer recommendations to farmers in his area.

Some 1562 fertilizer and variety test plots were reported where yields were obtained and the information made available to farmers in the counties and districts. Forty counties and districts had pasture competitions where prizes were awarded through the soil improvement association. The crop improvement association promotes field tours and field days and acquaints farmers with good soil management practices.

ASSISTANCE TO FARMERS IN NORTHERN ONTARIO

The land clearing and breaking of land policy provided assistance to farmers who are endeavouring to increase the number of acres under cultivation in order to become full-time farmers. Under this policy the Department of Agriculture pays 50% of the cost of clearing and breaking land up to amaximum of \$25.00 per acre. Farmers who have cleared land and are not cropping or utilizing the present cleared acreage are not eligible for this subsidy. This assistance is available only where there is a sufficient acreage suitable for agricultural purposes. Applications are received at the Agricultural Representatives' offices and each farm is inspected by the Agricultural Representative to determine the advisability of clearing more land. In some cases farmers are advised that a neighbouring abandoned farm with cleared land might be purchased for less than the cost of clearing additional land on their own farm.

The following summary indicates the extent of assistance granted in the different districts during the fiscal year:

REPORT OF CLAIMS FOR SUBSIDY Re: Northern Ontario (April 1, 1961 - March 31, 1962

District	No. Farms	Acreas Cleared and Broken	Amount Spent	No. Wells	Amount Spent	Total Subsidy Paid
Algome	21	115	\$ 2,847.00	7	\$1,553.54	\$ 4,400.54
Cochrance N.&.	W. 20	239	5,909.45	9	1,394.77	7,304.22
Cochrance S.	13	145 1/4	3,631.25	9	2,368.64	5,999.89
Kenora	12	215	5,003.71	9	2,160.04	7,163.75
Manitoulin	17	131 1/2	3,166.96	6	1,040.93	4,207.89
Muskoka & Parry Sound	20	146	3,650.00	7	1,750.61	5,400.61
Nipissing	36	438 1/2	10,962.50	17	4,676.52	15,639.02
Rainy River	62	969.9	24,042.01	5	1,034.25	25,076.26
Sudbury	19	92	3,712.99	9	1,895.69	5,608.68
Temiskaming	93	1177	27,194.69	7	1,645.98	28,840.67
Thunder Bay	59	975	22,264.42	8	1,917.38	24,181.80
			TOTAL SI	PENT		\$133,823.33

A committee composed of the Department of Lands and Forests and Department of Agriculture was appointed to advise on the disposition of crown lands. The Agricultural Representative is a member of this committee and investigates all applications for crown land. In every case farmers or prospective farmers are advised to purchase abandoned farms with some land cleared and fewer applications for crown land are approved.

A total of 23 co-operative farms in Northern Ontario participated in the farm management program. Farm records on these farms have been analyzed for the last three years and were available for discussion at farm management courses. The farm earnings were compared with previous years and reports were submitted by each Agricultural Representative regarding the recommendations suggested to each farmer on their specific problems. The average inventory on these 23 farms was \$38,614.00. The average gross receipt was \$12,489.00 and the average labour income \$1,076.00. The average of the three high labour income farms was \$4,543.00. This information is being used by the Agricultural Representative to evaluate the recommendations made and to assist other farmers with similar problems.

More farmers are requesting this information on farm management and 102 farm account books from Northern Ontario were analyzed. A summary of the 102 farms was prepared dividing the various enterprises. This information is used by the Agricultural Representative to advise prospective farmers regarding the amount of capital required and the returns that may be obtained on an average farm operation.

SERVICE CLUBS

Service clubs provide generous support for extension activities in all counties and districts. A total of 185 service clubs contributed \$20,168.17 during the year, particularly to 4-H club programs in the form of money, trophies, banquets and trips. Service clubs also assisted at rural-urban nights and visited some 4-H club members. The Agricultural Representatives are members of service clubs and work with the usiness men in their locality.

RURAL COMMUNITY NIGHT SCHOOLS

Rural Community Night Schools which are sponsored jointly by the Ontario Department of Agriculture and the Ontario Department of Education were held in thirteen counties and districts during the past year.

These courses continue to attract a large number of rural people. Again dur-

ing the past year courses were offered on a wide variety of subjects.

PRESS, RADIO AND TELEVISION

Daily and weekly newspapers, radio and television stations continue to provide excellent publicity for agricultural activities and extension programs. A total of 3435 articles were prepared for the local press keeping both farm and urban people informed. Weekly broadcasts are prepared for local radio stations and a total of 3365 radio broadcasts were made by the Agricultural Representatives. The Agricultural Representative also presented 119 telecasts on local television programs.

OFFICE STATISTICS

		Average
54 Agricultural Representatives' Offices	Total	Per Office
No. Letter Received	233,392	4,322

No. Incoming Telephone Calls	139,595	2,585
No. Visitors at Office	111,211	2,059
No. Letters Written	125,315	2,320
No. Circular Letters Mailed	1,002,676	18,568
No. Bulletins and Reports Distributed	248,006	4,592
No. Meetings Held in Office	4,241	78
No. Miles Travelled by Car on Government		
Business by Agricultural Representatives	803,605	14,881
No. Miles Travelled by Car on Government		
Business by Associate and Assistant		
Agricultural Representatives	583,738	10,809
No. Meetings Attended by Agricultural		
Representatives	5,673	105
No. Meetings Attended by Associate and		
Assistant Agricultural Representatives	2,709	50

JUNIOR FARMER EXTENSION WORK

Extension Branch personnel in the county and district offices assist in the program of local and county Junior Farmer Associations. These Associations, which have as their motto "Self Help and Community Betterment", offer a program to their members which is educational, practical, social and recreational. Excellent co-operation exists between Junior Farmer Associations and Extension Branch personnel.

JUNIOR FARMERS' ASSOCIATION OF ONTARIO

The office of Secretary-Treasurer of the Association is held by the Director of Junior Extension of the Branch and for that reason the work of the Branch is closely associated with Junior Farmer work throughout Ontario.

There are 7,099 members representing 182 Junior Farmer and Junior Institute clubs affiliated with the Provincial Association in 1961-1962.

PUBLIC SPEAKING COMPETITION

The Directors of the Association were heartened with the response to the Provincial Public Speaking Competition this year. Thirty counties entered, which was a marked increase from the eighteeen entered last year. The \$100,00 scholarship, offered by the Association to the high ranking contestant, was awarded to Miriam Henry, Prince Edward County. The other four finalists were: Heather Simmons, Stormont County; Carol Craven, Kent County; Wayne Chappell, Bruce County; Paul Bailey, Welland County. The five finalists reveived pen and pencil sets from the T. Eaton Company.

DEBATING COMPETITION

There was an increase in this competition with eighteen counties participating in the first round. The debating topics were more acceptable than sometimes in the past. The Directorate chose them for the first time and they were as follows:

Rounds one and two, "Resolved That Part-Time Farmers Are Detrimental To Ontario Agriculture".

Rounds three, four and five, "Resolved That Farmers Should Process Farm Products".

Many coaches, judges and supporters helped to make this project one of the most important and successful in the Junior Farmer program. Prizes were made available for the first time this year by the Cities Service Oil Company Limiteda book on public speaking to each of the 72 debaters, a trophy to the winning team

and miniature trophies for the members of the winning team.

MUSIC

The provincial finals of the music competitions were again held at the Toronto Conference in January and were extended to include a Solo Instrumental Class. This class and the fact that the choir festival was changed to a competition seemed to create a friendly, competitive spirit and increased interest. Adjudicators Mr. Reginal Geen, Mr. Harvey Perrin and Mr. David Barrie announced the following winners: Mixed Quartet - Halton County; Ladies Trio - Perth County; Male Quartet - Waterloo County; Choir - Ontario County and Solo Instrumental - Robert MacCrimmon, Glengarry County.

DRAMA

Interest in drama was maintained at a high level with four zone drama festivals being necessary to declare entries for the Provincial Drama Festival. The zone winners were - Thorndale Junior Farmers, Middlesex County; Teeswater Junior Farmers and Junior Institute, Bruce County; Woodville Junior Farmers, Victoria County and Alloa Junior Farmers, Peel County.

Peel County won the Ozburn Shield for presenting the best play "The Ugly Duckling". The Howard trophies for the best actor and actress were won by Don Cleave and Joan Crawford of Peel County.

LEADERSHIP TRAINING SCHOOLS

Junior Farmer Leadership Training Schools were successful right across the province again this year. They were planned and conducted by the Provincial Directors and were held at Ridgetown, Simcoe, Listowel, Orangeville, Lindsay, Pincton, Smiths Falls and Finch. These schools do much to help fulfill the Junior Farmer motto "Self Help and Community Betterment". Many persons gave generous assistance to these schools.

CONFERENCES

There was a good deal of enthusiasm about the success of the Guelph, Toronto and Kemptville Conferences. These were attended by over 1,500 Junior Farmers. The careful planning of these conferences by the planning committees and the many competent Junior Farmers, who so capably carried out the programs contributed to their success.

The Provincial President, Edna Strong of Peel County, assisted with the Annual 4-H Conference at New Liskeard in October and very capably represented the Association at many other special functions during the year.

JUNIOR FARMER PUBLICATIONS

Three Junior Farmer publications "Your Invitation to Join a Junior Farmer Club", "Your Club Meeting" and "You the Officer" were mailed to each local club president and secretary during the year.

Two Ontario Department of Agriculture publications "Public Speaking and Debating and Effective Meetings" and "Hints to Judges" were used to good advantage by debating and public speaking contestants. They are available free of charge at Agricultural Representative offices.

SPORTS

Four regional sports days were quite successful events with plenty of competitors and good crowds.

There was increased interest in the Provincial Curling Bonspiel which was held at Guelph. 36 rinks were involved - 30 men's and 6 ladies'. Victoria won the

men's bonspiel and Norfolk the ladies' bonspiel.

PROVINCIAL LEADERSHIP TRAINING CAMP

In spite of the adverse harvest conditions last fall 64 campers attended and the camp was just as successful as in previous years.

Competent officers and good programs combined with enthusiastic members make successful local and county Junior Farmer and Junior Institute Clubs. The main objective of Provincial Camp is to help provide these three ingredients. The Ontario Department of Agriculture provides financial assistance and staff for this annual leadership camp.

SOILS AND LAND USE TOUR

The 1961 Junior Farmer Soils and Land Use Tour included stops in York, Ontario and Simcoe Counties. Prof. Tom Lane of the Soils Department and the Director of Junior Extension co-operated to plan the itinerary and conduct the tour. Coloured slides depicting this tour have been used extensively at Junior Farmer and other farm meetings. The calibre of delegates participating in this tour is high.

JUNIOR FARMER SCHOLARSHIPS

Realizing that many of the young men enrolled in the three two year diploma courses in agriculture in Ontario are active Junior Farmer members and knowing that many of these young men will return to their home communities as leaders after graduation, the Junior Farmers' Association of Ontario has for the past two years presented a \$50.00 scholarship at W.O.A.S., K.A.S. and O.A.C. These cash awards are presented to a student who has completed his first year and has shown outstanding leadership ability. The 1961 winner were - Donald Hedrick, W.O.A.S.; Thomas Walmsley, K.A.S.; Robert G. Murray, O.A.C.

NEWS MEDIA

Newspapers, radio stations and T.V. stations very generously report the many Junior Farmer activities throughout the year.

TRAVELLING SCHOLARSHIPS

The following are the Junior Farmers from Ontario who were awarded travelling scholarships and the names of visiting delegates to Ontario:

Overseas Trip - Ruby Scheel, Renfrew; Edna Strong, Peel; Graydon Bowman, Temiskaming; Gordon Murray, Victoria.

American Institute of Co-operation Annual Meeting - Bill Galbraith, Middlesex; Douglas Meredith, Kent.

Province of Manitoba - Carolyn Davis, Elgin; William Strong, Huron.

Northern-Southern Ontario - Marion McLean, Middlesex; Phyllis Wilson, Manitoulin; Stanley Vanden Bosch, Lanark; Stanley Pickard, Manitoulin.

Hoosier Recreation Workshop-Merom, Indiana - Mary Hinan, Peterborough; Jeanne Pearson, Ontario; Mary Kennedy, Middlesex; Carl McIntosh, Lanark; Ken McEachern, Wellington.

R.Y.U.S.A. Conference - Ruth Miller, York; Caroly Murray, Glengarry; Ken Tamlin, Victoria; Charles Johnson, Lincoln.

Grange Inter-State Youth Exchange - Rosina Leeson, Kent; Helen Dryden, Ontario; Arnold Bock, Waterloo.

Tri-State Conference - June Shantz, Waterloo; Elsie Martin, Hastings; Don Green, Durham; Robert Howes, Dufferin.

Provincial Rural Leadership Forum - Jean Track, Thunder Bay; Graydon Bowman, Temiskaming.

VISITORS TO ONTARIO

England - Anne Steele; Beryl Cookson; James Armstrong; William Pryce. Scotland - Mary Bryson; Mary Campbell; John Simpson; Mr. and Mrs. John Caldwell.

Northern Ireland - Annie Mayes; John Ramsay.

Australia - Rodney Dowe.

Alberta - Alvin Goetz; Eugene Elm.

Nova Scotia - Mrs.William Swetnam; Carolyn Travis; Eric Meek; William MacCurday; Doug Byers.

Prince Edward Island - Rowena Garrett; Marilyn Paynter; Mark Gallant; Stavert Huestis.

U.S.A. - Virginia Henderson, Colorado; AliceMcComb, Tennessee; Wayne Reeder, Maryland; Roger Halley, Michigan; Edwin Hadlock, New York; Larry Friend, Indiana; Roberta Maust, Pennsylvania, Leanne Shobert, Pennsylvania; Donald Horner, Pennsylvania; Robert Antram, Pennsylvania.

New Zealand - Richard Oakden.

AFFILIATIONS

The Junior Farmers' Association of Ontario is affiliated with and nominates representatives to many farm organizations and associations in Ontario. These are:

Federated Women's Institute of Ontario - Florence Porter, R.R.#1, Stratford; Jean Smith, Ethel; Elisabeth Barker, R.R.#2, Gormley (alternate).

Royal Agricultural Winter Fair - Bob Williams, R.R.#1, Picton; Ross Tedford, R.R.#3, Chatham; Ross Brethet, R.R.#3, Thornton.

Canadian National Exhibition - Wray Marshall, R.R.#1, Caistor Centre.

Ontario Plowmen's Association - Griffin Ketcheson, R.R.#1, Foroboro; Ray Walter, R.R.#4, Woodford.

Ontario Federation of Agriculture - Keith Richardson, R.R.#4, Dunnville; Angus Campbell, R.R.#1, Iona Station; Jim Needham, R.R.#3, Ripley; Griffin Ketcheson, R.R.#1, Foxboro; Mac Arbuthnot, Russell.

Ontario Conservation Council - Jack Cockburn, Drumbo; Don Brodie, R.R.#2, Gormley.

Land Acquisition Committee - Allan Murray, R.R.#4, Caledonia.

Rural Leadership Forum - Mac Arbuthnot, Russell.

JUNIOR FARMER AND 4-H QUARTERLY

The Junior Farmer and 4-H Quarterly is published by the Extension Branch for Ontario Junior Farmers and 4-H members. Over 19,000 copies are mailed to farm families, press, radio and TV outlets, extension personnel and other interested individuals. The Quarterly features educational articles as well as stories and picture of Junior activities. This publication helps to co-ordinate and promote the Department's Junior program.

4-H CLUB PROGRAMME

In 1961, a total of 28,833 projects were undertaken by the young people enrolled in this program in Ontario. Each of these young people, who range in age from twelve to twenty years in the case of Agricultural Clubs and from twelve to twenty six years in the case of Homemaking Clubs, carried on one or more active projects.

The Agricultural Representative Service takes the major responsibility for the organization and direction of the 4-H Agricultural Club program in Ontario. One third of the prize money for 4-H Agricultural Club members is paid by the Extension Branch. 4-H Homemaking Clubs are organized by the Home Economist under the direction of the Home Economics Service.

Following is a summary of the 4-H Clubs organized in Ontario in 1961:

4-H Agricultural Clubs	No. of Clubs	Membership
4-H Calf Clubs	372	7,180
4-H Swine Clubs	38	466
4-H Sheep Clubs	8	115
4-H Poultry Clubs	13	235
4-H Grain Clubs	83	1,233
4-H Field Crop Clubs	44	666
4-H Potato Clubs	69	1,262
4-H Tractor Clubs	49	724
4-H Forestry Clubs	29	667
Miscellaneous 4-H Clubs	21	328
	726	12,876
4-H Homemaking Clubs		
4-H Food Clubs	477	4,652
4-H Clothing Clubs	674	6,278
4-H House Furnishing Clubs	192	1,680
4-H Hospitality Clubs	176	1,793
4-H Defence Clubs	88	840
4-H Garden Clubs	82	714
	1,689	15,957

VOLUNTARY LEADERSHIP

As membership and programs in 4-H Club work in Ontario continue to expand, the role of the voluntary leader in assisting the Agricultural Representative with this work has become increasingly important. Last year there were approximately 1200 leaders working on a voluntary basis in the various counties and districts in the 4-H Agricultural Club program.

In many counties the work of the club leaders is co-ordinated through a Club Leaders' Association. The Ontario Department of Agriculture provides an opportunity for club leaders to meet to assist in planning programs and to evaluate the results of work being carried on at the county level. Special training courses for voluntary leaders were held on a county and regional basis.

In recognition of the leadership given on a voluntary basis, the Ontario Department of Agriculture again provided a complimentary trip for leaders to either the Royal Agricultural Winter Fair or the Ontario Soil and Crop Improvement Association Convention.

PROVINCIAL 4-H LEADERSHIP WEEK

This Leadership Week was initiated in Ontario in 1959 and is held at the Ontario Agricultural College, Guelph. Each county and district is eligible to select one 4-H member, with basis of selection on total participation in 4-H, record of 4-H Inter-Club Competitions and participation in community activities. Forty-six 4-H boys were selected in the Province for this leadership program in 1961.

WM. H. DANFORTH LEADERSHIP TRAINING SCHOLARSHIP

This scholarship was initiated in Ontario in 1958. The scholarship is awarded to one 4-H boy and one 4-H girl, and provides two weeks of intensive training at the American Youth Foundation Training Camp, Stony Lake, Oceana County, Michigan, U.S.A. Last year the scholarships were awarded to:

Mary Snedden, Almonte, Lanark County

Sandy Hepburn, Campbellville, Halton County.

4-H INTER-CLUB COMPETITIONS, NEW LISKEARD

The eight annual 4-H Inter-Club Competitions were held for Northeastern Ontario at the Demonstration Farm, New Liskeard, on October 6 for the Districts of Algoma, Sudbury, Manitoulin, Cochrane North, Cochrane South, Cochrane West, Temiskaming, Nipissing, Muskoka and Parry Sound. There were fifty-four teams taking part in the competitions. The winners were:

Project	Teams Competing	Winning Team Members	District	Coach
Dairy Cattle	15	Jack Love, Mindemoya Owen Legge, Providence Bay	Manitoulin	E. R. Jennings
Beef Cattle	12	Richard Pollard, R.3, Bruce Mines Rod Smith, Dayton	Algoma	A. G. Mitchell C. A. Tanner
Potato	17	James West, R.R.1 Charlton Wayne Minnette, Box 22, Charlton	Temiskaming	M. F. Cook C. J. Nesbit
Forestry	4	Wayne Blackstock, Rydal Bank Wayne McClelland, R.2, Desbarats	Algoma	A. G. Mitchell C. A. Tanner
Grain	6	George Cameron, Dayton Donald Cameron, Dayton	n n	77

4-H INTER-CLUB COMPETITION, GUELPH

The Inter-Club Competitions for Provincial honours were held at the Ontario Agricultural College, Guelph, on October 13, 1961, with 506 boys and girls on 253 teams taking part in Agricultural Club Competitions.

Project	Teams	Winning Team Members	County	Coach
	Competing			
Dairy Calf	77	Paul Tamblyn, Orono	Durham	A. O. Dalrymple
		Doug. Jose, Newcastle	27	n ·
Beef Calf	41	Murray Coultes, R.R.5, Wingham	Huron	D. H. Miles
		Murray Scott, R.R.1, Belgrave	27	D. G. Grieve
Swine	19	Alex Thornburn, R.R.4, Paisley	Bruce	G. R. Gear
		Ronald France, R.R.4, Paisley	27	A. H. Blades
Sheep	7	Richard Jarvis, R.R.1, Paris	Brant	D. N. Graham
-		Bruce Telfer, R.R.2, Paris	77	G. A. Proctor
Poultry	5	Larry Welsh, R.R.4, Bowmanville	Durham	A. O. Dalrymple
Ť		Garry Jeffery, R.R.3, Bowmanville	77	27
Grain	33	Harold Yellowlees, R.R.1, Inniskillen	77	27
		Patricia Knox, R.R.1, Hampton	97	n
Field Crops	16	Faye Sharpe, R.R.4, Peterborough	Peterborough	F. C. Paterson
•		Shirley Sharpe, R.R.4, Peterborough	"	D. C. Miller
Potato	11	Bill Moore, R.R.3, Picton	Prince E.	H. I. Bell
		Diane Gorsline, R.2, Demorestville	27	B. E. Beeler
Forestry	14	Jack White, R.R.1, Roslin	Hastings	S. MacDonald
		John McGee, R.R.1, Harold	37	G. H. Patterson
Tractor	30	Glen Miller, R.R.2, Woodstock	Oxford	R. J. Milne
		Ken Sutherland, R.R.3, Woodstock	7)	D. A. Taylor

CANADIAN COUNCIL ON 4-H CLUBS

This organization is set up for the primary purpose of co-ordinating and corelating the various provincial 4-H Club programs across Canada. The organization is composed of representatives from the Canada Department of Agriculture as well as from the ten Provincial Departments of Agriculture, together with thirty-eight business members and twelve associate members who represent various national agricultural organizations.

A.G. Bennett, Director of Junior Extension, represented the Ontario Department of Agriculture as a Provincial Director on the Council for the year 1961.

The Ontario Department of Agriculture makes an annual membership grant of \$3,300,00 to the Council.

NATIONAL 4-H CLUB WEEK

One of the main functions of the Canadian Council on 4-H Clubs is to sponsor National 4-H Club Week. This event provides an opportunity for outstanding 4-H Club members in Canada to meet together.

Ontario sent fourteen delegates to National Club Week. Seven of the delegation were selected from 4-H Homemaking Clubs and seven from 4-H Agricultural Clubs. Those selected were as follows:

4-H Homemaking Club Members

Shirley Martin, Bar River Peggy Howell, R.R.1, St. George Magaret Atkins, R.R.2, Oakville Nancy Reynolds, R.R.3, Madoc Marilyn Stewart, R.R.2, Denfield Karin Butenschon, Leonard Patricia Ann Walker, R.R.3, Newmarket

Algoma District **Brant County** Halton County Hastings County Middlessex County Russell County York County

4-H Agricultural Club Members

Douglas Avery, R.R.3, Brockville Leeds County Jack Giles, R.R.1, Glencoe Delmer Cavanagh, Kinburn Babs Clarke, R.R.6, Guelph Frank Coulter, R.3. Owen Sound John Hart, R.R.3, Woodstock Lyle Vanclief, R.1, Ameliasburg

Middlesex County Carleton County Wellington County Grey Oxford County Prince Edward County

JUNIOR PROGRAMMES AT CLASS "A" EXHIBITIONS

CENTRAL CANADA EXHIBITION, OTTAWA

There were 107 teams competing on August 22, 1961, in the General Agricultural Competition, with 308 club members participating. Camp members spent a day at the Experimental Farm and were taken on a tour of the City and the Parliament Buildings. There were some five hundred boys and girls attending this camp. A total of 270 4-H members and Junior Farmers participated in the Open Judging Competition.

PETERBOROUGH EXHIBITION

A total of 136 boys and girls took part in the Junior Agricultural program at Peterborough Exhibition on August 7, 1961.

The program included Livestock Judging Competitions, a Hay Judging Competition, an agricultural quiz and an identification test and a quiz concerning farm safety and farm equipment. In the evening the juniors were guests of the "Exhibition Board" at a dinner and were guests of the Exhibition at the evening grandstand performance.

CANADIAN NATIONAL EXHIBITION, TORONTO

This competition was conducted in 1961 in a different way than previously. Under the revised program, 385 contestants competed in each of three classes: Livestock, Field and Horticultural Crops and Farm Engineering. Contestants judged classes of livestock and field crops, answered quizzes and participated in identification contests.

WESTERN FAIR, LONDON

There were 216 boys and girls taking part in the Junior Agricultural program at Western Fair on September 12, 1961. The program consisted of a Livestock Judging Competition. The contestants were served dinner through the courtesy of the Western Fair Association and were also their guests at the evening grandstand performance.

INTER-COUNTY LIVESTOCK JUDGDING COMPETITIONS

ROYAL WINTER FAIR, TORONTO, NOVEMBER 9, 1961

Twenty-three teams were entered, with each team composed of three contestants:

Jeffrey Bull Memorial Trophy - won by Peterborough County

Winning team members: Kerry English, R.R.3, Hastings

Robert Stockdale, R.R.2, Indian River

John Dunford, R.R.4, Lakefield

Coaches: F.C. Paterson, Agricultural Representative

D.C. Miller, Assistant Agricultural Representative

Ontario Veterinary Association Challenge Trophies -

Dairy Cattle - won by Peterborough County

Winning team members: Kerry English, R.R.3, Hastings

Robert Stockdale, R.R.2, Indian River

John Dunford, R.R.4, Lakefield

Beef Cattle - won by Wellington County

Winning team members: John Anderson, R.R.3, Harriston

Dave Cleghorn, R.R.1, Ariss Murray Cox, R.R.4, Rockwood

Swine - won by Huron County

Winning team members: Murray Coultes, R.R.5, Wingham

Ivan Howatt, R.R.1, Belgrave

Murray Scott, R.R.1, Belgrave

Robert Graham Memorial Trophy - 22 entries -

won by F.C. MacGregor, Ontario Agricultural College

E.H. Stonehouse Memorial Trophy -

won by Larry Bertrand, R.R.1, Marmora, Hastings

County

E.A. Summers Memorial Trophy - 69 entries -

won by Larry Bertrand, R.R.1, Marmora, Hastings

County

F.K. Morrow Scholarship Award - 30 entries -

won by Kerry English, R.R.3, Hastings, Peterborough

County

Gold medals were awarded to the top contestant in each of the breeds of livestock judged.

INTER-AGRICULTURAL SCHOOL LIVESTOCK JUDGING COMPETITION ROYAL AGRICULTURAL WINTER FAIR, TORONTO, NOVEMBER 9,1961

This competition is open to teams consisting of four students enrolled in the second year of Diploma Course at an agricultural school, college or university. Three teams were entered:

Won by Western Ontario Agricultural School

Winning team members: Ron Gardiner, R.R.2, Glencoe

Don Hendrick, R.R.2, Crediton Leslie Wernham, R.R.1, Denfield Mervin Scott, R.R.5, Tillsonburg

Coached by J.W. Underwood, Livestock Division, Western Ontario

Agriculture School, Ridgetown

OTTAWA WINTER FAIR, OTTAWA, OCTOBER 27, 1961

Nineteen contestants represented five counties in the Livestock judging Competition,

Ottawa Winter Fair Trophy won by Hastings County

Winning team members: Owen Ketcheson, R.R.1, Moira

Kenneth Bedore, R.R.2, Marmora

Robert Keene, R.R.1, Madoc

Coaches: S. MacDonald, Agricultural Representative

G.H. Patterson, Assistant Agricultural Representative

Silver medals were presented to top contestants in each of the breeds of livestock judged.

JUNIOR FAIRS

4-H CALF AND SWINE CLUB CHAMPIONSHIP SHOW, OTTAWA

The Ottawa Winter Fair Association, through financial assistance granted by the Canada and Ontario Departments of Agriculture, staged the Eastern Ontario 4-H Calf and Swine Club Championship Show during the Ottawa Winter Fair on October 27,1961. A total of 537 4-H Club members participated.

QUEEN'S GUINEAS CLASS, ROYAL WINTER FAIR, TORONTO

One hundred and eighty-four 4-H Club members showed baby beef calves in this class at the Royal Winter Fair on Friday, November 17, 1961.

The Aberdeen-Angus steer shown by Shirley Earley, Kerwood, was made Grand Champion of this class. The Queen's Guineas and The Honourable T.L. Kennedy Trophy were presented by The Honourable Wm. A. Stewart, Minister of Agriculture for Ontario. Following is a summary of this class:

Entries: Aberdeen-Angus - 69

 Herford
 - 47

 Shorthorn
 - 68

 Total
 - 184

Champion Angus Shirley Earley, Kerwood Middlesex County

(Queen's Guineas Winner)

Reserve Champion Angus Allan Hodgins, Granton Middlesex County (Reserve Queen's Guineas Winner)

Champion Hereford Lila Black, Belgrave Huron County

Reserve Champion Hereford Earl McEachren, Glencoe Middlesex County

Champion Shorthorn Reserve Champion Shorthorn Bob Merry, Milton Diane Pettit, Colgan Halton County South Simcoe County

Average sale prince per pound of calves exclusive of breed champions and reserve champions - $34\ 1/4\ f$.

HOME ECONOMICS SERVICE

The objectives of Home Economics Service are to bring to the women and girls of rural Ontario a program of practical, up-to-date home economics education; and to encourage them to help themselves and develop their own leadership.

MEANS OF EXTENSION

Local Leader Training Schools: A two-day school is set up in the county or district, arrangements being made by the resident Home Economist. Women's Instistutes or other organized groups each send two of their members to the school to be trained as leaders and these leaders go back and relay what they have learned to their local groups. This plan has been very satisfactory in efficiency, economy of staff and expense and indeveloping leaders and stimulating the women to exchange their own ideas.

Short Courses and Workshops: A specialist from our staff meets directly with a local group where the subject requires more specialized teaching.

Radio and Television: Each month ten radio tapes on Home Management are prepared for distribution by the Information Branch to private radio stations throughout the province. One TV program has been filmed and this work will be expanded. This year several member of our nutrition staff have co-operated with other branches of the Department in putting on TV programs.

THE PROGRAM

Home Economics Service has an extension program in Foods and Nutrition, Clothing, Home Furnishings, Home Crafts, Home Management, Health Education.

The Foods and Nutrition program is planned primarily to teach the principles of nutrition in feeding a family. The projects this year were meat cookery, food shopping, catering for crowds and "creative cookery", to get the ultimate in quality.

Clothing and Textiles featured basic sewing techniques and the finishes that give home dressmaking a professional look. There was a course in choosing and using the new fabrics continually coming on the market.

In Home Furnishings women were taught to make curtains, drapes, lampshades, even lamp bases. One course dealt with new trends and materials in furnishings.

The Home Crafts taught this year were rug making, block printing, copper tooling, glove making, leatherwork and needlework. It was possible to offer this variety by employing some specialists on a part time basis.

Home Management dealt with consumer education and money management and with the selection and care of modern home equipment. In the equipment study our instructor was assisted by an extension engineer demonstrating safety with electrical appliances.

ATTENDANCE

There were 71 Local Leader Training Schools with 610 groups represented and 5506 women taking the project.

There were 503 Short Courses and Workshops with an enrolment of 8682.

JUNIOR EXTENSION

Home economics extension work with girls is directed in the field by County or District Home Economists. There were 28 full-time Home Economists on the staff this year, some of these serving 3 or 4 counties.

A major responsibility of the County Home Economists is the promotion and supervision of girls' 4-H Homemaking Clubs led by local women. The program offers projects in Food and Nutrition, Clothing, House Furnishing, Hospitality, Home Defence and Gardening.

Some 169 Training Schools for Local Leaders were held this year. There were 1,686 clubs in the province with an attendance of 15,972 girls.

Supervision is given to club members taking part in 4-H Club programs at provincial exhibitions and this year Home Economists co-operated with clubs and fair boards in placing 499 exhibits at Class B fairs.

The Provincial Girls' Conference was held at the O.A.C. in June. This is a very popular educational event, held annually as a reward and inspiration to girls who have already given outstanding service to their clubs.

The County or District Home Economist co-operates with Junior Institutes and Junior Farmers in planning programs and in carrying out educational or other projects for community or self-improvement.

AGRICULTURAL ENGINEERING EXTENSION SERVICE

The demand by farmers for assistance with their agricultural engineering problems continues to increase. This demand is more marked in the requests for advice and assistance in planning new buildings, remodelling old ones, improvement in ventilation and in materials handling. Requests were also received for advice on the care and the most economical size of machines to purchase for a farm enterprise.

There was a substantial increase in the number of tile drainage surveys made and the acres of systematic tile drainage planned for farmers of last year.

A conference of the Agricultural Engineering Extension Specialists was held at the Kemptville Agricultural School, September 11th to 15th, 1961. The Agricultural Engineering Extension Liaison and Research Committee meeting was held at the same time. Problems requiring research in the field were brought to the attention of members of the Engineering Science Department, Ontario Agricultural College, and the Research Officer, Department of Agricultural Engineering, Canada Department of Agriculture. The latest developments in agricultural engineering were presented by specialists in particular areas of study. The contributions of Professor C.G.E. Downing, Head, Department of Engineering Science, Ontario Agricultural College, and his staff, and also of Mr. W. Kalbfleisch, Chief of the Engineering Research Service, Canada Department of Agriculture, and his staff, to the program were particularly important.

SUMMARY OF AGRICULTURAL ENGINEERING EXTENSION SERVICE

1.	Drainage	1960-1961	1961-1962
	Total calls	952	1,019
	No. of acres systematically surveyed	20,473	22,340
	No. of feet of profile surveyed	180,000	206,400
	No. of feet of open ditch surveyed	90,200	46,350
	No. of advisory surveys	364	312
	No. of drainage applications on file	933	917

Approximately half of the systematic survey acreage was completed by the eight summer assistants.

Sufficient drainage tile was manufactured to supply the demand, except for a short period in mid-summer.

Twenty-three townships passed the Tile Drainage enabling by-law or increased the amount previously passed, bringing the total number of townships enabling farmers to borrow money under the Act to 220. A total of \$1,340,023.96 was borrowed during the fiscal year. This is an increase of \$272,441.96 over 1960-1961.

53,960,000 feet of clay and concrete tile were produced in Ontario last year, of which 40,000,000 were sold for agricultural use and 21,000,000 of which were financed by the Tile Drainage Act.

Tile prices and installation costs have advanced slightly, with 4" tile from $4 \frac{1}{2} \notin to 6 \frac{1}{2} \notin$, and digging at $5 \notin to 8 \%$ a foot, depending on the area.

The staff co-operated with the Engineering Science Department, Ontario Agricultural College, in planning and instructing a two week short course held for the Tile Ditching Machine Operators in February 1962. This course is designed to raise the efficiency of the operators and their understanding of drainage plans.

Pond surveys

	1960-1961	1961-1962
Dams designed	69	90
Dugouts designed	140	127
	209	217
Applications on file	314	235
Inspections	36	56
Water Supply		

A total of 57 water supply systems were planned.

Farm Structures

	1960-1961	1961-1962
New buildings designed	410	602
Buildings and stables remodelled	409	567
Ventilation problems	208	307
Materials handling systems designed	d 19	88
	1,046	1,564
Applications on file	396	523

It is to be noted that considerably greater emphasis is being placed on the production areas, namely tile drainage and buildings for livestock production.

4-H Clubs

Forty 4-H Tractor Maintenance Clubs were instructed with a total enrollment of 576. All members were visited during the club year.

THE FRUIT AND VEGETABLE EXTENSION SERVICE

The Fruit and Vegetable Extension Service through its programs and projects renders assistance to producers of fruit and vegetables. The main objective of the Service is to extend to these people a knowledge of the benefits to be derived from

the application of useful and practical scientific information and so improve their net income and level of living.

The personnel of the Service is comprised of thirteen technically trained men located in the main fruit and vegetable production areas of the Province.

The Fruit and Vegetable Extension Specialists bring to producers not only new and improved practises but the results of research. Extensive use is made of information letters, demonstrations, press, radio, television and organized meetings in an endeavour to reduce the cost of production and provide a more satisfactory economic and social life for these growers of specialized crops.

GENERAL CROP CONDITIONS

The date of the commencement of the 1961 growing season was one of the latest and coldest on record. By May 1st there had been very little growth but in spite of this cold weather buds opened and finally on May 12th most of the tender fruits were in full bloom. Apples, peaches, pears, plums and cherries had a very heavy bloom and with only fair pollinating weather a very heavy fruit crop was set. In the Niagara Peninsula following bloom many peach trees and grape vines began to show considerable winter injury. This winter injury probably related to weather conditions prior to freeze-up during the fall of 1960.

Strawberries and raspberries came through the winter in excellent shape and and the mulch was removed at the normal time. Frost on May 29th and 30th caused some light damage to strawberries in Norfolk and Niagara. Harvest commenced during the second week in June with the total crop being slightly below that of 1960.

With the exception of a few warm days the weather remained cool until the week of July 9th at which time higher temperatures prevailed. There had been ample rainfall in most areas and no destructive hail had been reported. With the adequate moisture, fruit and tree growth was good. In spite of this the season tended to be about a week to ten days later than normal and this delay carried through to harvest.

The apple crop was estimated to be about five and one-half million bushels, being one of the largest in recent years. Hot weather and abundant moisture during late August and September induced above average sizing in most areas. With the exception of Spy, colour was reasonably good on McIntosh and other winter varieties. Cold storage space was at a premium but this was alleviated to some extent by a movement to Quebec for storage. The marketing of the apple crop was difficult and this continued through the whole season. Price received by the growers were considerably lower than for the 1960 crop.

The maturity of the peach crop was accelerated by the hot humid weather. This accompanied by the later initial harvest date shortened the harvest period of the mid-season varieties and there was considerable over-lapping of these varieties. There was a glut of peaches during the two main harvest periods which resulted in lower returns to the growers. Processors were unable to handle the heavy supplies available during the shorter than usual harvesting period.

The pear crop was good with excellent quality and size generally well above average. The yield of Bartlett pears was slightly in excess to 1960, but the Keiffer crop was down about twenty-five per cent. Most of the Bartletts and Keiffers move into storage for future processing.

The total yield of plums and prunes were estimated to be somewhat in excess of the 1960 crop. Prices received by growers was comparable to 1960.

The crop of cherries, both sweet and sours, was considerably in excess of the 1960 crop. Yield of sour cherries was almost double that of 1960 with a total of over thirteen thousand tons. The bulk of the crop moved for processing with a high percentage being frozen. The large crop of sour cherries caused marketing diffi-

culties and it is expected that there will be a carry-over of frozen cherries into 1962.

The grape crop proved to be very disappointing. Yield in 1961 was estimated to be forty-one thousand tons in comparison with fifty-five thousand tons in 1960. The reduced yield was probably caused by very extreme weather conditions prior to the harvest of the 1960 crop as well as some winter injury. With a high acid content and low sugar, quality was below average. The French hybrids which are increasing in popularity are proving rather difficult to grow. Winter injury and aerial gall are problems in the production of these hybrids.

The cool, cloudy wet weather, especially in April, was unfavourable for early vegetable planting and growth. As the season progressed, growing conditions rapidly improved in early summer and very good growth of all vegetable crops resulted. Moisture and temperatures were adequate for the late season crops through the summer. While the fall was dry it had no adverse effect on the vegetable crop. There were very few reports of damage caused by severe storms. Two light hail storms occurred in the Keswick Marsh area during the last week of June, first week of July which did some damage to lettuce, carrots and onions. Of interest is the fact that on July 5th a frost occurred at the Bradford Marsh and some potato fields were singed and lettuce survived a thin coating of ice. The extensive use of herbicides to control weeds in vegetables is reducing production costs.

The value of vegetables produced in Ontario during 1961 was comparable to 1960 being in the neighbourhood of sixty-four million dollars. With the exception of processing tomatoes, the acreage of vegetable processing crops was slightly increased in 1961. The acreage of processing tomatoes was down about four thousand acres. In Essex County the tomato crop averaged over 14 tons per acre and this exceeded all previous records and resulted in producers requesting and receiving an increase in the "quotations" on deliveries. In Eastern Ontario with favourable weather only in September, the processing tomato crop was estimated to be 8 tons per acre.

INSECTS AND DISEASES

The abundant fruit crop was harvested with only minor losses from insects and diseases. Growers generally are not only becoming more familiar with pests, but they are also improving their spraying practises. Insect damage was held to a minimum. Mites were abundant and necessitated extra sprays in many orchards. Pear burn which is attributed to mites caused little damage as early season control had been well carried out. During late August the pear rust mite made its appearance and caused severe russetting on Bartlett pears in the Niagara Peninsula. This particular mite has not been reported for many years. Fortunately, the russetting was only on the skin and did not pose any problems in the processing plants. However, some baby food manufacturers declined to accept these russetted pears. The eight spotted forester which was first reported in 1960 was more abundant on French hybrid grapes during 1961. Considerable damage was caused to prunes by apple maggot. During 1962 traps will be set out to trap this insect so as to have more information on its time of emergence. The incidence of apple maggot attacking apples throughout the Province was the lowest in several years. Most growers, as a result of their experience in 1960 tended to carry out a better apple maggot spray program. More apple growers are reporting DDT resistance by codling moth. Wherethis situation exists alternate spray materials are being recommended.

Insects of one kind or another were troublesome in some areas during 1961.

Aphids were a problem on most crops, especially on late cabbage and cauliflower. The pigweed case bearer, a new insect to Ontario caused considerable losses to growers of asparagus in the Huttonville area. Thorough control of pigweeds in and around asparagus plantings will be necessary in order to keep this insect under control. Root knot nematode is posing a problem to vegetable growers in the Grand Bend Marsh. Various methods including fumigation and crop rotation are underway in an endeavour to control this nematode. In the Bradford Marsh area, onion maggot injury was fairly high in some fields in spite the use of recommended insecticides. Maggot fly emergence seemed to be continuous as well as above normal. Carrot rust fly damage, also in the Bradford Marsh, was severe in many fields of carrots and parsnips. It has now been proven that the insect is resistent to Aldrin and so a different insecticide will be recommended for 1962.

Diseases attacking fruits were not especially severe in 1961. Brown rot on the stone fruits and downy mildew on grapes were both well controlled. Growers of French hybrid type grapes are becoming increasingly alarmed at the incidence of an aerial gall on these vines. The disease is associated with excessive growth and winter injury. It is believed that the present infection took place mostly in May and June of 1960 following the winter. Although it was not until 1960-1961 pruning season that much of the infection was found. The only recommendation that could be made at present is to remove and destroy the infected vines and to train up renewal stems as replacements. Only minimum amounts of nitrogenous fertilizers should be applied for normal vine growth. Cherry leaf spot which has been always difficult to control is becoming less of a problem. The new material Dodine, gives excellent control of this disease. The cherry yellows virus was not a serious problem in 1961. This was probably due to the cool, damp season. A survey of young cherry orchards, to find the incidence of cherry yellows virus was completed 1962. It was found that generally there is not too much virus in these young orchards. Older orchards which were examined were found to have considerably more than the young orchards. The cool, damp weather was excellent for apple scab infection. While considerable scab did appear on the foliage, growers are able to keep it very well controlled on the fruit.

In some vegetable areas diseases proved to be quite difficult to keep under control. In the Bradford Marsh, potato blight was generally severe in the fields but fortunately did not carry over into storage to any degree. In the Grand Bend Marsh onion blast was a most serious disease during 1961. Where there was a combination of this disease and a high thrip population most of the plants were defoliated. The head lettuce crop ran into its usual disease problems, these being mainly tip burn and internal breakdown. On the high land or mineral soils where vegetables are grown the following diseases caused anxieties: cucumber scab on cucumbers, blotchy-ripening and viruses on tomatoes, phoma and club root crucifers, early blight of celery, and mildew on bunching onions.

FRUIT & VEGETABLE EXTENSION PROJECTS

A good proportion of the time of the Fruit and Vegetable Extension Specialists is required in answering inquiries concerning the numerous problems involved in the production of these highly specialized crops. In spite of this, the Specialists carry on some very important projects and programs in an effort to improve the economy of the growers.

DEMONSTRATION PROJECTS

Successful Extension requires the passing along of the results of research to producers and their final application by the grower. This extending of information is carried out in part by the use of demonstrations on plots on growers farms.

During the year, Fruit and Vegetable Extension Specialists had over twenty demonstration projects on growers farms. As the season progresses, Extension Specialists organize meetings at the farm level where demonstrations are set-up in order that the growers may access some new practise. Examples of projects are: Herbicides to control weeds in vegetable crops, Use of rabbit repellents, Variety trials, Cover crops in orchards, Soil management, Pruning, and the Girdling of Spy apple trees to promote earlier bearing.

APPLIED RESEARCH PROJECTS

Many research institutions in the Province are carrying on research projects designed to help the fruit and vegetable grower. Many of these research-projects being of the applied type require further tests under field conditions which, for the most part, are not practical at the research centre. Fruit and Vegetable Extension Specialists assist in lining up plots on growers farms so that an accurate assessment may be made under actual field conditions. During the year Extension Specialists assisted in organizing some twelve applied research projects. Some of these are: Control of scald on apples in controlled atmosphere storage, Carrot Rust Fly Control, Onion Maggot experiments, Hardy Peach Rootstocks, Fertility Experiments on apples, dwarf fruits and rhubarb and the possible affect calcium chloride to apple trees when placed on roads adjacent to orchards.

SPRAY SERVICE PROGRAM

In order that the grower be kept informed on matters of pest identification proper use of spray materials and time of applications to insure clean crops, timely letters are forwarded to growers from Fruit and Vegetable Extension Specialists offices. The value of this program is becoming increasingly important because of the multiplicity of spray materials, resistance to certain pest sprays requiring new materials and more exact timing for application. While the spray service is designed primarily for information on pest control, other pertinent information on other subjects is often included.

LEAF ANALYSIS PROGRAM

The Fruit and Vegetable Extension Specialists co-operate with the Horticultural Experiment Station in the operation of this program. Specialists release the application forms, collect the fees and leaf samples from the growers. When necessary, advice is given to the growers on the interpretation of the analysis and any other recommendations felt necessary. This is of value to the grower as the Extension Specialist has a knowledge of the orchard or vineyard. Prior to 1961 growers of apples, peaches and grapes could have their tissue samples analyzed. In 1961 pears and sour cherries were added. There was an increased response to this service in 1961 and this indicates a much greater awareness among growers of the importance of proper nutrition in producing high yields of high quality fruit. It also shows their recognition of the value of leaf analysis in determining the nutrient needs of their orchards and vineyards.

FRUIT TREE AND VINE CENSUS

A Fruit Tree and Vine Census is conducted in the Province every five years, with the last census being commenced in the fall of 1956. 1961 census got underway in December and was carried on throughout the winter. Census forms are mailed out to fruit growers and they are asked to fill in information on the varieties grown and the acres of their fruit trees and vines. When the census is completed in 1962 and the information compiled it will indicate trends in the fruit pro-

duction and the potential crops in each fruit growing district of the Province.

SOIL ANALYSIS PROGRAM

The Soil Analysis Program is a co-operative program with the Soils Department at the Ontario Agricultural College. Fruit and Vegetable growers forward samples of their soils to the Soils Department where they are analyzed. The reports on the analyses are forwarded to the Fruit and Vegetable Extension Specialists and they in turn make recommendations as to the amounts of manure, fertilizer, etc. required to produce a particular crop. During 1961 the Specialists made recommendations on some 976 reports. This is proving to be a very excellent and effective program.

FARM BUSINESS MANAGEMENT PROGRAM

Fruit and Vegetable Extension Specialists assist the Agricultural Representative in this priority program in the Counties. The specialists have been trained in Farm Business Management and are giving increasing assistance to growers in their business.

4-H CLUB PROGRAM

Fruit and Vegetable Extension Specialists take an active interest in grape clubs, potato clubs and strawberry clubs. Most of the assistance that is provided to the various clubs is mostly of technical nature with some coaching in judging being given. The Specialists act as judges at the Provincial 4-H Judging Competitions.

FARM SAFETY PROGRAM

The service co-operates with the Agricultural Representative and the Farm Safety Councils in the various Counties. As fruit and vegetable growers are using very poisonous spray materials, it is necessary that they be continually cautioned on the proper use and application of these deadly materials.

PRESS AND RADIO

Local, weekly and daily press provide an excellent medium for the promotion of the various Extension programs. Space is provided for articles in culture and management, as well as many announcements of meetings and other activities. During the year fruit and vegetable Extension Specialists prepared 139 releases.

Radio stations in the fruit and vegetable producing areas of the Province are most co-operative by providing time to Extension Specialists as a medium for extension work. Schedules for programs are set up for daily, weekly and monthly broadcasts and growers make use of this pertinent information. During 1961 the staff participated in over 200 broadcasts as well as giving considerable assistance to the Ontario Radio Tape Service.

TOBACCO EXTENSION SERVICE

The Tobacco Extension Service through its many programs and projects has continued to provide leadership and assistance to flue-cured tobacco growers in Ontario. The programs are mainly designed to promote improved plant practises in the production of flue-cured tobacco and so assist these farm families to achieve a higher standard of living and a richer more satisfying life.

Three Tobacco Extension Specialists have their headquarters at the Tobacco Substation at Delhi which is in the centre of the Flue-Cured Tobacco Industry in Ontario. The production of Flue-Cured Tobacco is highly specialized. As such, many of the problems and information needs of growers require individual atten-

tion. Personal contact with growers on the farms, in the office, over the telephone, or by mail is an important phase of the Tobacco Extension program. During 1961, disease, insect and fertility problems were particularly troublesome and required much attention through the medium of personal contact. Extensive use of meetings, radio broadcasts and press releases are necessary as a means of supplying general information to growers.

During 1961 considerable time was devoted to 4-H and Junior Farmer Clubs. The six 4-H clubs presently in existence are organized through the office of the Agricultural Representative and the program is presented by the Tobacco Extension Specialists. One Junior Farmer Club in Elgin County consists almost entirely of tobacco growers. An important phase of Tobacco Extension is that of keeping research personnel informed about problems occurring in the field, e.g. in one area a problem in the control of cut worms was observed. Research Entomologists were made aware of the situation and they discovered that the cut worms are resistent to the insecticides that were being used. For the coming year a different insecticide will be recommended for cut worm control in that area.

The Tobacco Extension Specialists assist in the Farm Management Program in Ontario. Farm Account Books with headings revised for Tobacco have been distributed to members of Junior Farmer Clubs. Assistance is being given by the Farm Economics and Statistics Branch in the setting up and use of the Farm Account Book.

CROP CONDITIONS

In 1961 production of flue-cured tobacco in Ontario has been estimated at 189,000,000 lbs. with an acreage of 122,265, the average yield should be about 1,545 lbs. per acre. This is somewhat less than the record 1,608 lbs. per acre produced in 1960 but is a reasonably good yield considering the growing and harvesting conditions.

By the first week of April, planting of seed in greenhouses was pretty well completed. Seed germination and seedling growth were rather slow because of cool, damp, cloudy weather throughout April and May. The mean monthly temperatures for April and May at the Tobacco Substation were about 5 degrees F. lower than the long term average for both months. Planting started somewhat later than usual particularly where the soil was imperfectly drained. Many of the weak transplants were unable to withstand the shock of planting and a great deal of re-planting was required. To add to this a frost occurred on May 30th and in a few cases complete re-planting was necessary. Tobacco plants set after this frost generally started better and grew more uniformly throughout the season. Cool wet weather continued into June with the result that plants made very slow growth. Black root rot became a problem on lower soils despite the use of varieties with a high degree of resistance to this disease and brown root rot also developed on many of the better tobacco soils. The presence of these two diseases caused much unevenness and late growth which probably contributed to problems later in the season. Drier weather during July helped the situation somewhat but it was found that most crops, because of poor root systems could not withstand extended periods of dry hot weather. It was necessary to irrigate many crops and at Delhi two irrigations were required before the end of July.

August rainfall was considerably above normal: 5.81 inches as compared to the long term average at Delhi of 3.16 inches. The abundance of moisture enabled the full utilization of heavy fertilizer applications and manure which resulted in excessive growth and delayed maturity of the plant. This tobacco was very thin with a high moisture content. The conditions led to the numerous curing dif-

ficulties that were encountered throughout August and early September. An alarmingly high proportion of tobacco in the lower primings went dead in the kiln. Pole rot was also a serious problem, especially where the tobacco was excessively large and over crowded in the kiln. Weather Fleck Leaf Spot injury was considerably greater on the 1961 crop.

The overall damage from hail and frost was not extensive in 1961. Hail did cause severe damage to a few crops in the Mt. Brydges, Dorchester and Vienna areas. At Delhi, the first fall frost occurred on September 29th, but most of the tobacco had been harvested by that time.

In general the 1961 crop contained a higher than usual proportion of bright thin tobacco as well as scrap. Unfortunately this year there is a low market demand for the bright thin grades of tobacco. The heavier bodied richer grades have been attracting a good demand and it appears at the present that tobacco growers should be adopting cultural practises and using varieties which will produce a higher proportion of the quality of tobacco presently in demand.

GREENHOUSE DISEASES AND INSECTS

The weather during the greenhouse season was much cooler and more cloudy than usual. Weather of this nature after seeding favours the development of a white mould growth on the seed bed surface, especially where corn meal is used as a seeding mixture. The fungus rarely causes any damage but is of much concern to most tobacco growers. The cloudy weather also contributed to a large amount of "tipping-over" or "heaving-out" during the spring of 1961. Many greenhouses were left quite spotty and uneven as a result of this condition. Once again damping-off was a very serious problem and it is estimated that about fifty per cent of the tobacco growers encounter this disesase each year. It appears that present control measures for the disease are not adequate. The Tobacco Extension Service is conducting some small trials in an effort to find more effective control, and while some progress has been made, it is felt that as this is a serious disease that some research should be initiated.

Black root rot was more prevalent in the greenhouse than it has been in previous years. However, the actual plant losses were of a minor nature. The disease usually occurs in patches in the seed bed and indicates incomplete sterilization. Blue mould, which was formally a serious greenhouse seeding disease is almost non-existent now. No cases of this disease were reported in 1961.

Insects are not a serious problem in tobacco greenhouses. Ants were a nuisance in a few greenhouses and control measures were necessary. Severe root knot nematode damage was found in one greenhouse in Norfolk County and this is the first time that nematode damage has been observed in tobacco greenhouses. Sow bugs were found feeding on plants in a greenhouse in Middlesex County and this is the first known instance of damage to tobacco plants caused by this insect.

FIELD DISEASES

Tobacco growers suffered comparatively heavy crop losses from field diseases during the 1961 growing season. Sore shin, black root rot, brown root rot and weather fleck were the most serious diseases.

Sore shin, which is a field form of damping-off caused many plants to die or develop slowly after transplanting. The cool wet weather after planting aided the development of the disease and many fields had to be heavily reset after planting. Plants that were only mildly affected by the organism continued to grow but later in the season toppled over or were blown over by the wind.

Nematode injury, which results in the disease brown root rot, appears to be steadily increasing in flue-cured tobacco. The disease causes a stunting of the

plants and the yield of tobacco is greatly reduced. It is estimated that over 1500 acres of the 1961 crop were treated with soil fumigants to destroy the high nematode population and therefore reduce the incidence of brown root rot.

Black root rot which seldom causes extensive plant injury was quite evident in most tobacco growing areas. Tobacco on heavy soils and on poorly drained fields suffered most from the disease. Recommended varieties are considered fairly tolerant to black root rot but the seedlings do not exhibit a high degree of tolerance. Therefore, if cool wet weather prevails after planting, the crop may suffer extensively from this disease. Weather Fleck Leaf Spot caused an estimated five to six million dollar loss. Losses were heavy on some farms in the severe weather fleck area close to Lake Erie but much more damage than usual was observed farther north particularly around Brantford and Burford in Brant County. More than usual reports of weather fleck injury were also received from the Port Hope area. A new variety – Delhi 61 which is tolerant to weather fleck was grown on a few farms for the first time in the severe weather fleck area. This variety did show an improvement over the other varieties but the amount of damage was so severe that losses were fairly heavy even on farms where this variety was grown.

The leaves of the 1961 crop tended to be over-sized and thin and many growers encountered a leaf rot in the kiln during the curing process. Curing diseases referred to as barn rot or pole rot occur when excessively large thin tobacco is crowded into the kiln. Actual leaf loss however, was of a minor nature and was confined mostly to the first and second pullings.

Increasing amounts of tobacco with a slaty-grey colour are appearing in the Ontario tobacco crop. While this type of tobacco has been found in several Counties, it is much more prevalent in some areas than others. The majority of this tobacco is presently coming from Renfrew, Durham and Northumberland Counties. A few growers are finding as much as ten per cent of their crop in this "grey" tobacco category. The Buyers do not wish this type of tobacco and therefore growers receive a much lower price for it.

FIELD INSECTS

Crop losses as a result of insect damage were not large. Root maggots, as in the last three years, were present in large numbers again. The use of Diazinon in the planting water however, gave in general quite satisfactory control of this insect.

Two species of cutworms known as the "sand-hill cutworm" and the "dark-sided cutworm" have shown marked resistance to the normal cutworm control measure. In preliminary tests research entomologists have obtained some measure of control by using DDT.

While these species of cutworms were limited to five or six farms in 1961, there is no indication how widespread this problem will be in 1962. Cutworms generally in other areas are well controlled through the use of broadcast applications of aldrin and heptachlor before planting.

Aircraft continue to be used extensively for applying insecticides to the tobacco crop. They are used mainly inapplying endrin for hornworm control. It is estimated that fifty to sixty percent of the hornworm control is applied by aircraft. A considerable amount of pre-plant cutworm was also applied by aircraft for the first time in 1961.

TOBACCO EXTENSION PROJECTS AND PROGRAMS

A large proportion of the time of the Tobacco Extension Specialists is re-

quired in answering inquiries concerning the numerous problems involved in the production of this higly specialized crop. This is evident in the fact that some 1275 tobacco growers make personal visits to the office to discuss some phase of tobacco culture. However, the Specialists carry on some very important projects and programs in an effort to improve the economy of tobacco growers.

DEMONSTRATION PROJECTS

Several demonstration projects were set up in the Alliston, Leamington and Port Hope areas. These plots contained fertilizer treatments, chemical weed control treatments, and variety comparisons. So that growers could assess these demonstrations, a Twilight Meeting was held at each location during the last week of July. Tobacco growers are very eager to become familiar with new methods in the production of their crop.

APPLIED RESEARCH PROJECTS

The Applied Research Projects were mainly in the field of assessment of certain chemicals for the control of some diseases and weeds. Two chemicals were evaluated and compared to steaming as to their effectiveness for controlling black root rot in the tobacco seed bed. Another project was to evaluate a material for its effectiveness in controlling damping-off without causing damage to the tobacco plant. A third project was the evaluation of several herbicides for weed control and to assess their damage to tobacco plants.

Tobacco Extension Specialists co-operate with research personnel on Regional Variety Tests, Grey Tobacco Experiments, and Fertilizer Experiments. They also assisted in evaluating two new tobacco varieties, namely -- Delhi 61 and Yellow Gold which was grown by a selected number of growers.

SOIL TESTING PROGRAM

This program is designed to assist growers in applying the right amounts of fertilizers according to soil tests. During the year fertilizer recommendations were made on approximately 700 soil reports. It is of interest that some farmers are now having more than one soil sample taken on their farms. As there is considerable variation between these tests there appears to be some educational work done to improve the soil sampling technique.

FARM BUSINESS MANAGEMENT PROGRAM

The Tobacco Extension Specialists are assisting in the Farm Management Program with tobacco growers. Meetings have been held with one group on the use of the Account Book which has been changed to make it suitable for the tobacco farmer.

FARM SAFETY PROGRAM

The Tobacco Extension Specialists assist the Agricultural Representative in Farm Safety and co-operate with the Farm Safety Council. They provide assistance in the planning and carrying out of safety projects.

PUBLICITY PROGRAM

In order to reach as many tobaccogrowers as possible, extensive use is made of press and radio to present information on new methods and practises. During the year the Specialists prepared some 18 press articles. Throughout the year all local newspapers carried special news releases and in addition will occasionally request articles about growing conditions and other general tobacco information.

The Tobacco Extension Specialists co-operate with the local radio stations with timely information during the growing season. Some twenty radio broadcasts were made during 1961. In addition seven radio tapes were prepared for special broadcasts throughout the season.

Farm Economics and Statistics Branch

The Farm Economics and Statistics Branchis conterned with all business and social problems facing Ontario Agriculture. By the collection of Agricultural Statistics and the study of Production and Marketing situations, the Branch seeks the basic information required by departmental administration, farm organizations and individual farm operators in their business decision-making

The Statistics Section publishes a yearly summary of general agricultural statistics for the Province as well as seasonal reports on dairy crops, livestock, fruits and vegetables. The Production Section has a regular program of study of the costs involved and the changing methods employed in the product on of all crop and livestock products. The Marketing Section is continually in estigating prices, demand, market movements and the methods employed in the marketing of all major farm products.

The conduct of special statistical surveys was strengthened during the year by making these the responsibility of one statistician rather than part of the general statistical program.

Production studies continued with special emphasis on dairy production, steer feeding, swine, canning crops, apples, grapes, asparagus, pasture and land use

The marketing staff was mainly conterned with milk, butter, eggs, feef, bugs, potatoes, grapes for processing and on prices of all farm products.

The expanding Departmental Extension Program in Farm Management and the appointment of agricultural economists to the staff or both Kempthille and Bidgetown Agricultural Schools relieved the Branch staff of some routine extension activities, but greatly increased the demand for basic extension material. The Farm Account Book Project alone almost doubled in whome. The expanding work in this field was facilitated by the re-organization of the Agricultural Economics Co-ordinating Committee to include representatives from the Extension Branch and from the two Agricultural Schools.

The work of the Branch was again actilitated by the follest on-operation of the Government Departments of Agricultural organizations and a large number of individual farmers. The advice and assistance of the technical staffs of other Branches of this Department, of the various Legariments at the Unitario Agricultural College and other Agricultural Schools, of the Canada Department of Agriculture and of the Dominion Bureau of Statistics was of inestimable value and freely obtained. Particular appreciation is one the Marketing Boards and other farm organizations and especially the numbers of farm operators with gave freely of their time and experience to provide primary data for the many studies carried on.

The Branch staff continued to receive an increasing demand from the general public for aid that required considerable adademic training as well as technical skill and a practical approach to farm business problems. Two members were again on educational leave of absence for part of the year and one of whom is well advanced in his preparation for a PhD degree.

STATISTICS

The Branch is continually seeking ways to improve the accuracy and timeliness of its statistics, and the past year has been no exception. Perently developed procedures being used in other areas were reviewed. Estimating of crop acceases and conditions from aerial photographs has been tried in areas of the United States and in Western Canada. At the present time high costs and proclems of interpretation of the photographs limit the extensive use of this method.

Considerable time was also spent studying the objective method of forecasting fruit crop production being carried out in the United States relating to citrus fruits, sour cherries and apples. This method involves estimating the probable yield from representative trees in orchards chosen at random in the producing area. These trees are marked and are visited several times each season, at which time the fruit on representative limbs is counted and its size measured. From these observations estimates of yield are made and related to the whole producing area. The growers keep records of the fruit actually harvested from the marked trees and thus the accuracy of the forecast estimate is checked.

In response to the need for reliable forecasts of production, in advance of price negotiations by producers and processors, some work of this nature, but in less detail, was carried out in the Niagara Peninsula this past year. A committee, composed of growers, processors and fieldmen made estimates for sour cherries, peaches and pears. The Branch had an observer present when these estimates were being made. Results were encouraging, and the work will be continued in 1962.

Statistical data relating to all phases of agriculture was again compiled during the year and published in the four regular reports issued by this Branch. These reports, which are available free of charge to anyone upon request, are:

The Monthly Crop and Live Stock Report; The Monthly Dairy report; The Seasonal Monthly Fruit and Vegetable Report, and The Agricultural Statistics Report for Ontario.

The Monthly Crop and Live Stock Report is published each month from May to January inclusive. It contains timely information on a County basis relating to acreage of crops, progress of seeding, development during the growing season, yields obtained, live stock numbers, current prices obtained by farmers for their products, weather data and other related materials.

The Monthly Dairy Report, together with a March Supplement, contains statistics relating to various phases of the dairy industry. Monthly schedules are obtained from all creameries, cheese factories, dairies, ice cream manufacturers and concentrated milk plants, showing the quantities of various dairy products made and handled during the month. Tables are prepared from these schedules showing for Ontario the production, by County, of creamery butter and cheddar cheese, the sales by market area and size of container of fluid milk and cream, chocolate dairy drink, buttermilk and skim milk, and a provincial total only for the output of condensed, evaporated and powdered milk products. Other tables show the average monthly wholesale price of butter and cheese, cold storage holdings of these two products at the first of each month, and prices paid by farmers for dairy feedstuffs at London and Ottawa.

The Seasonal Fruit and Vegetable Report is published monthly from April to October. This report gives information on fruit and vegetable crops relating to the dates of seeding, the progress of growth and development during the season, preliminary forecasts and final estimates of production, acquirements by processing firms, prices received by growers and the total farm value of each of the

principal crops grown in Ontario.

The Annual Statistics Report brings together in one publication the latest yearly data for all phases of agricultural activity in the province. The first part of this report contains tables showing the estimated volume and gross value of total farm production, yearly estimates of farm cash income and net income, monthly and yearly averages of prices received by producers for agricultural products and detailed statistics relating to the production of fruit and vegetables, milk and milk products, poultry and eggs, tobacco, maple products and honey. The second part shows the acreage, production and value of field crops by County division.

The third part shows the estimated number and value of each class of livestock on farms by County. Other sections show weather data for a large number of weather stations located across the province and a summary of crop production and livestock numbers annually for the period from 1902 to date.

RESEARCH ACTIVITIES

The research activities of the Branch are concerned mainly with finding solutions to current farm business problems and with obtaining basic information that will assist individual farmers, farmers' organizations and departmental administrators in their decision-making. An individual study may be merely the analysis of existing secondary data, but it usually also calls for obtaining a great deal of primary data on the field.

Study reports are made available to those who can use them. In some cases the distribution is limited, but where the report has general interest, it is published.

STUDIES COMPLETED AND REPORTS PUBLISHED

- "Ontario Farm Management and Account Report 1960" by J.H. Clark and D.H. Plaunt (ODA publication 315).
- 2. "Significant Tables from D.H.I.A. 1959-1960" by Frank Barnes
- 3. Cost Section of "D.H.I.A. Progress Report 1960" by Frank Barnes
- 4. "Does Tile Drainage Pay?" by W.J. Dillon, J. Parrish and J.M. Purvis (ODA publication 3).
- "Time and Efficiency on Dairy Farms" by M. Pembry.
 A synopsis of this report is available as ODA publication "Time Costs Money".
- 6. "Consumer Purchases and Opinions of Butter and Margarine" by J. H. Weijs.
- 7. "Farms That Disappear" by H. F. Noble (ODA publication 68).
- 8. "Some Aspects of Competition Among Vegetable Oils and Fats" by J.H. Weijs.
- 9. "Spring Grain Production Costs and Management" by J.B. Nelson A synopsis of this report adjusted to 1961 Costs is also available.
- 10. "Statistical Tables re "Survey of Land Use in Selected Areas of Ontario 1810-1956" by Henry F. Noble.
- 11. "Minimum Requirements of a Farm Unit" by Henry F. Noble
- 12. "Earnings Have Improved in D.H.I.A. Processed Milk Herds" by Frank Barnes (ODA publication 374).
- 13. "Earnings Have Improved in D.H.I.A. Fluid Milk Herds" by Frank Barnes (ODA publication 375).

SPECIAL STUDIES COMPLETED

1. Types of Farming Reports by J.H. Clark and M. Schaba

Eight types of farming reports were prepared from the Account Books analysed at the Guelph Centre for information of co-operating farmers and Farm Management Associations.

2. Livestock Enterprise Reports

The Account Book records were used as a basis for special reports to the co-operating farmers on the types of livestock farming in which they were chiefly interested.

3. Milk Price Formula by W.G. Fulton

The adequacy of the existing milk pricing formula was examined by together with the probable effects of suggested changes previous to their implementation.

- 4. Butterfat Differential for Fluid Milk by W.G. Fulton
 The probable effect of a changed differential was examined previous to the implementation of a revision.
- 5. Egg Marketing in Ontario by E.A. Haslett

COMPLETED STUDIES WITH REPORTS UNDER PREPARATION

- 1. Quotas in Ontario's Fluid Milk Industry by W.G. Fulton
- 2. Sugar Beet Production Costs F.R. Abraham and Al Fisher
- 3. Soy Bean Production Costs F.R. Abraham and Al Fisher
- 4. Grain Corn Production Costs F.R. Abraham and Al Fisher
- 5. Hay Production Costs W.J. Dillon.
- 6. Apple Production Costs J.M. MacCharles
- 7. Green Pea Production Costs Al Fisher
- 8. Canning Corn Production Costs Al Fisher

Many of the Branch studies cannot be completed in one year or the period of the study does not coincide with the fiscal year. For all these incompleted studies preliminary information is issued as soon as any worthwhile material is available, even though quite tentative.

STUDIES IN PROGRESS

1. Dairy Herd Costs and Management

This continuing study of the records of more than 1200 commercial dairy herds enrolled in the D.H.I.A. program provides an incomparable body of information on milk costs and dairy management for marketing boards and Farm Management Extension.

2. Farm Account Project

Detailed records from an increasing number of farms of all types (1024 in 1961) provide the basic information for all Farm Management activities in Ontario.

- 3. Production Costs and Management Studies Livestock
 - a) Beef cattle R.C. Ward
 - b) Swine J.R. Stephens
 - c) Sheep J.R. Stephens
 - d) Summer and Winter Milk Costs Frank Barnes
 - e) Large Size of Dairy Herds by Frank Barnes
- 4. Production Costs and Management Feed Crops
 - a) Pasture W.J. Dillon

5. Production Costs and Management - Cash Crops

- a) Dwarf Apples J.M. MacCharles
- b) Asparagus J.M. MacCharles
- c) Grapes J.M. MacCharles
- d) Tomatoes Fred Abraham
- e) Seed Grain (Kent County) Al Fisher

6. Marketing Studies

a) Beef Marketing Practices

Several facets of this subject have been completed and interim reports prepared on the following by H. Weijs:

- i) Marketing Channels and Methods Used
- ii) Producers' Opinions on Selling Methods at Toronto Stockyards
- iii) Producers' Opinions on a Marketing Plan
 - b) Demand for Ontario Grapes for Processing H. Weijs
 - c) Egg Price Making E.A. Haslett
 - d) Operation of Community Auction Sales in Ontario H. Weijs
 - e) Analysis of Teletype selling of Hogs H. Weijs
 - f) Feasibility of Subsidized Export Program for Ontario Surplus Dairy Production W.J. Fulton
 - g) Surplus Fluid Milk Entering Milk Processing Industry W.J. Fulton

7. Miscellaneous

- a) Farm Grain Drying Methods and Costs D.N. Nicolson
- b) Soil Productivity Ratings based on Cost Studies J.B. Nelson

COMMUNICATION ACTIVITIES

Gathering agricultural statistics and studying farm business processes have little value until the information obtained has been communicated to the individuals and organizations who can use it in the solution of their farm business problems. Wide communication of the findings of the Branch has been obtained by the distribution of published reports, press releases, radio and television presentations, public addresses and personal consultations.

Direct communication to farmers has, of course, been multiplied many times by the Farm Management activities of the Extension Branch. Veterans Land Act and Farm Credit Corporation credit advisers are also extensive users of Branch information.

PUBLISHED MATERIAL

The published reports of this Branch have wide distribution among farmers, farm organizations, agricultural business and agricultural economists. The yearly demand for copies of all reports runs into many thousands with requests not only from Ontario but occasionally from all other Provinces of Canada, and from many foreign countries.

Preliminary reports issued during the course of a study, even though tentative and incomplete, are also in great demand.

PUBLIC ADDRESSES

The Director and members of the Branch staff are in continual demand as

speakers atfarmers' meetings and at meetings of other groups with a particular or more general interest in agriculture. Many of these meetings are interested in the findings of particular studies, while others have a more general interest in agricultural outlook, farm management, land use, etc.

During the year speakers were provided for 110 such meetings.

The interest created by several of these addresses was such that it was necessary to mimeograph the material for general distribution. Some of these were as follows:

- a) Financing Large Farms by H.L. Patterson
- b) Trends in Cattle and Horse Numbers
- c) The Competitive Position of Ontario Potato Growers in the Ontario Market by H.L. Patterson
- d) Farm Management Lessons from D.H.I.A. Records by H.L. Patterson
- e) Investment in Relation to Income by H.L. Patterson
- f) Some Economics in Sheep Production by H.L. Patterson
- g) Trends in Agricultural Exports by H.L. Patterson
- h) Trends in Farm Abandonment by H.F. Noble
- i) The Economics of Beef Cattle Production by R.C. Ward

CONSULTATION ACTIVITIES

The demands on the Branch staff for direct consultation with individual farmers and farm organizations continues to increase.

The increasing interest in Farm Management has multiplied the number of farmers seeking advice on management problems. Most of the demand is handled through the Extension Branch Farm Management Program with personnel of this Branch acting as consultants, but many individual requests were handled directly by the Branch during the year.

Expert advice and assistance from members of the staff was sought by many farm organizations and committees. This was particularly true of marketing groups, but many production and departmental groups were also looking for help. Among the many such organizations, members of the Branch personnel acted either as committee members or as expert consultants for the following:

- 1. Conservation Council of Ontario
- 2. Wetlands Sub-committee of Water Resources Commission
- 3. Junior Farmer Establishment Loan Corporation
- 4. Beef Pasture Improvement Committee
- 5. Milk Price Formula Committee
- 6. Vertical Integration Committee
- 7. Elgin County Soil and Crop Improvement Association
- 8. Ontario Vegetable Growers' Marketing Board
- 9. Grape Growers' Marketing Board
- 10. Ontario Beef Producers' Association
- 11. Egg Marketing Committee
- 12. Niagara Peninsula Fruit Growers' Marketing Committee
- 13. South Simcoe Potato Growers' Marketing Committee
- 14. Milk Producers' Co-ordinating Board

INDIRECT COMMUNICATION

Direct communication is often necessary and advantageous, but the most fruitful type is through groups and organizations. The Branch has used this type of communication extensively. The findings of Branch studies have been made available as complete reports, as synopsized reports, and as special reports prepared

to fit the interest of the organization concerned. Many of these special reports have been presented as addresses at organization meetings.

This indirect communication has been mainly through such Departmental and other groups as:

- a) Extension Branch of the Ontario Department of Agriculture, particularly in their Farm Management Program.
- b) Marketing Boards
- c) Crop and Soil Improvement Associations.
- d) Schools for Bankers
- e) Dairy Herd Improvement Associations
- f) Credit Advisers of Veterans Land Act and Farm Credit Corporation.

Farm Labour Service Branch

The Farm Labour Service in Ontario is conducted through the Ontario Federal Provincial Farm Labour Committee. This Committee is set up under a formal Agreement negotiated annually between the Federal Minister of Labour and the Provincial Minister of Agriculture.

The Committee concerns itself primarily with the formation of policies and procedures to be followed in the recruitment of farm labour. It is not active in the field of farm placement, but works very closely with the Regional Office of National Employment Service in assisting with the general farm labour program and, in special cases, supplies additional personnel on a part-time basis to assist with farm labour placements at peak periods. This service is confined mainly to two areas: (i) the recruitment and placement of Day-By-Day labour in the fruit and vegetable growing areas adjacent to Toronto; (ii) the placement of tobactoworkers in the tobacco growing areas during harvest time. The committee negotiates agreements with railway companies for a special tariff arrangement in the movement of full-time and part-time farm labour.

MEMBERS OF COMMITTEE: 1961-1962

E.M. Biggs, Deputy Minister of Agriculture for Ontario

J.W. Temple, Ontario Regional Director, National Employment Service L.F.D. Coulson, Regional Employment Officer, National Employment Service

G.H. Kidd, Agricultural Adviser, National Employment Service

J.D. McFarlane, District Superintendent of Immigration, Canada Department of Citizenship and Immigration

J.W. Drennan, Marketing Division, Ontario Department of Agriculture W.A. Montcalm, Extension Branch, Ontario Department of Agriculture Chairman:

R.G. Bennett, Chief, Marketing Division Ontario Department of Agriculture

MOVEMENT OF FARM WORKERS FROM THE MARITIMES

The movement of workers from the Maritimes for employment on Ontario farms commenced on April 11, 1961 and terminated with the expiration of the tariff on July 31, 1961. During this period, total arrivals by months remained fairly constant, with an increase in demand occurring at the Toronto distribution point in May, while the peak requirement in the Ottawa district was in June. This can no doubt be attributed to a slightly earlier commencement of the hay harvest in the central and western portion of Southern Ontario. The table which follows shows the number of arrivals by months at the two distribution points:

	Toronto	Ottawa	
April	21	23	
May	41	33	
June	19	48	
July	18_	71	
	99	175	Total: 27

It was felt that there was some improvement in the calibre of workers arriving in Ontario, which can be attributed to the co-operation received from selection officers in the Maritimes. The elimination of insincere and irresponsible workers can do much to improve requests for this help. Some of these persons remained throughout the winter on Ontario farms.

SUGAR BEET WORKERS

The acreage of sugar beets in Southwestern Ontario in 1961 was again on a greatly reduced scale in comparison to 1959, when approximately 38,000 acres were seeded. This year 17,369 acres were planted, with all blocking being completed on time, in June. Early in the year, at a meeting of growers and Canada and Dominion Sugar Company representatives, for the purpose of reviewing the anticipated labour supply for beet blocking, it was felt as a result of surveys that labour would be available locally in sufficient numbers to handle the reduced acreage. There appeared to be no need for an organized movement of beet workers from other Regions. Mechanization continues to reduce the labour requirements for this crop. It is estimated that two-thirds of the seeding was done this year with precision drills, while approximately 75-80% of the crop will be harvested mechanically.

TOBACCO HARVEST LABOUR

The cold, wet spring resulted in the late planting of tobacco. Early growth was slow and some replanting was necessary. Through June and July, increased temperatures caused the plants to develop rapidly, with the result the harvest was only delayed by one week.

Early in the year it was agreed to follow the procedure instituted last season relative to the admittance of a quota of two United States workers (primers and tiers) to a farm, in addition to a curer when required. The arrangements under which they entered Ontario were the same except for a few changes in procedure. The demand for curers decreased over the previous year with 116 fewer applications. Requests for primers were down 183 from 1,736 in 1960, while tiers increased by 30 to a total of 177.

An interesting feature of this years placement operations was the fact that although applications for United States workers decreased, placement of Canadian workers increased by over 2,200. Total placement (Canadian and United States) at 9,067 shows an improvement of nearly 2,000 placements over last year's total of 7,136. Transfer of Canadian workers to the tobacco fields was on the increase. This improvement in placements can be attributed in part to the continuing campaign to obtain advance information from the growers as to their labour needs, change in requirements at harvest time, etc. In this regard the Ontario Flue-Cured Tobacco Growers' Marketing Board has given considerable assistance through letters to the farmers and articles published in their monthly News Letter. The co-operation received from this organization during the recent harvest is greatly appreciated.

Again this year a temporary employment office was operated at Delhi, staffed by two Placement Officers. During the 61 working days the office functioned, a total of 1,410 persons were registered and 175 applications taken for United States workers. Some 967 orders were received, representing 1,624 vacancies and resulting in 1,548 placements. This is an increase of 204 placements over the previous season.

An additional service was rendered by National Employment Service this year to tobacco growers in the Langton area. A temporary office was opened for a period of 28 days. This resulted in registration of 519 applicants, 438 vacancies received and 417 placements.

"DAY-BY-DAY" SERVICE, WEST TORONTO

This service to fruit and vegetable growers in the Toronto area operated at a level exceeding the previous year's activity, with 147 growers being supplied help compared to 111 last year. The number of days worked in the period April

1st to March 31st totalled 52,374, compared to 40,153 last year. There were 1,661 persons placed in employment. The average daily placement was 219, with a peak of close to 600 on certain days.

The backward weather and rain somewhat retarded operations in the spring months. The demand for help was of a sporadic nature for the early varieties of fruit and vegetables. During the season the low price of some crops made harvesting a doubtful operation while, generally, production was high. Requirements of the Holland March growers continued to expand. Toward the end of the season some difficulty was encountered in meeting the heavy demand for vegetable workers.

GENERAL

There is a continuing demand for year-round workers for mixed and dairy farms. Difficulty is experienced in supplying suitable help with sufficient training to handle modern day farm equipment. There is no doubt that if more experienced help was available, requests for such workers would be on the increase. The trend towards larger farm units brings with it the use of larger and more complex equipment. Thus the efficient worker of a few years ago could be hopelessly outdated, which would suggest a need for training workers in modern agricultural methods.

STATISTICAL REPORT

	1961	1960
Total Farm Placements	28,122	19,876
Maritime Workers Brought to Ontario	274	310
Quebec Workers Brought to Ontario	nil	130
U.S. Tobacco Curers	1,403	1,519
U.S. Tobacco Primers	1,553	1,736
U.S. Tobacco Tiers	177	147

"DAY-BY-DAY" WORKERS, WEST TORONTO: 1 APRIL 61 - 31 MARCH 62

Number of days worked	52,374	40,153
Number of workers involved	1,661	817
Number of growers served	147	111

Farm Products Inspection Service

The Farm Products Inspection Service carried out the following program during the 1961-62 fiscal year:

- 1. Administration and enforcement of The Farm Products Grades and Sales Act, and regulations respecting (a) Fresh Market Fruit and Vegetables; (b) Fruit and Vegetables sold for processing purposes; (c) Honey; (d) Compulsory inspection districts and highway inspection stations; (e) Licensing of fruit and vegetable dealers; (f) Controlled-Atmosphere Apple Storages.
- 2. Administration and enforcement of The Plant Diseases Act, and regulations respecting (a) Apple Maggot; (b) Black knot; (c) Little Peach; (d) Peach yellows; (e) X-disease of peach; (f) San Jose scale; (g) Bulb and stem nematode; (h) Licensing of nurseries and dealers in nursery stock; (i) Inspection of nurseries.
- 3. Japanese Beetle trapping surveys and application of controls in co-operation with the Canada Department of Agriculture.
- 4. Variety certification of nursery fruit trees.
- 5. Variety and disease certification of raspberries.
- 6. Strawberry plant certification.
- 7. Other related services including acreage surveys, testing of produce containers, refractometer testing of grape maturity, shipping maturity testing of fruit and vegetables, electronic determination of colour in tomatoes and forced rhubarb, checking of tenderometers and methods of sampling peas for processing, fruit and vegetable exhibits, judging of fruit and vegetables, fruit and vegetable shipping and distribution reports, recording of prices paid to producers, crop estimating and crop reports, checking of C.A. storage air components, experimental grading of sweet corn for processing, Marketing Board work, extension and educational work in the grading, packing, storing and shipping of produce, and considerable liaison and committee work with fruit and vegetable industry organizations.

These services were administered through five district offices located in Leamington, Vineland, the Ontario Food Terminal, Toronto, Bradford and Gravenhurst. In addition sub-offices were operated in Simcoe, Grand Bend, Galt, Hamilton, Orangeville, Alliston, Barrie, New Liskeard, Sudbury, Fort William, Brighton and Ottawa.

FRESH FRUIT & VEGETABLE INSPECTION

Quality control continues to be a basic factor in the orderly marketing of farm produce. This includes proper grading and identification of the product, functional and attractive packaging and careful handling and transportation. The application of a balanced inspectional program is designed to keep the quality of fruit and vegetables up to satisfactory marketable standards at all levels of trade.

Compulsory inspection areas were designated in Essex County, the Niagara Peninsula and the Bradford Marsh, all controlled by Highway Inspection Stations. The Highway Station at Gravenhurst required trucks carrying produce from southern Ontario to the North, along No. 11 Highway, to stop for inspection. Administrative and request inspections were carried out within the closed areas, at farm and shipper packing sheds, dealers' platforms and at central plants.

Outside the compulsory areas, inspection of fruit and vegetables was carried out in the main production areas, at receiving and distribution points and at wholesale and retail levels throughout the Province.

Retail inspection in the centres of Ottawa, Metropolitan Toronto, Hamilton,

St. Catharines, London and Windsor was applied entirely by the Consolidated Retail Inspection Service, Dominion Department of Agriculture. Consumer complaints, farmers' markets, roadside stands and community sales barns were covered mainly by Provincial Inspectors.

Highway Inspection Stations

Closed Area	Inspection Stations	No. Days 'Operated	Truckloads Checked
Essex County	Wheatley (No. 3 Highway)	91	5,005
Niagara Peninsula	Fruitland (Queen Eliz.)	122	13,375
Bradford Marsh	No. 400 Highway and No. 11 Highway	128	12,597
Southern Ontario	Gravenhurst (No. 11 Highway)	Periodically hroughout year	995
		Total	31,972

FEDERAL-PROVINCIAL UNIFORMITY

Through the Canadian Horticultural Council progress continues toward increased uniformity of fruit and vegetable grading and packaging requirements applied by Federal and Provincial Inspection Services. In Ontario the inspection work carried out by the Canada Department and the Ontario Department is co-ordinated to ensure that no duplication or overlapping occurs.

SUMMARY OF OPERATIONS - FRESH FRUIT & VEGETABLE INSPECTION

	1961 - 62	1960 - 61
Administrative Visits		
Producers	12,303	11,230
Wholesalers	27,937	27,349
Packers & Shippers	38,093	33,725
Retailers	10,600	12,462
Markets	1,573	1,821
Roadside Stands & Sales Barns .	3,316	2,845
Consumer Complaints	66	52
Truck & Requested Inspections		
Certificates Issued	5,839	6,343
Blanket Inspection Reports Issued	9,699	10,777
Trucks Checked Through Highway Stations	32,022	29,043

Inspection Fees Collected	\$ 33,990.75	\$ 34,881.75
Violations		
Detentions Issued	3,980	3,569
Violations Issued	99	113
Letters of Warning	85	83
Convictions	46	35
Total Fines	\$ 932.50	\$ 1,170.85
Average Fine	\$ 20.27	\$ 33.45

INSPECTION & GRADING OF PROCESSING CROPS

Tomato Grading - In 1961 fifty-nine receiving platforms were operated, requiring a total of 144 Inspectors who graded 72,844 loads of tomatoes, 888 of which were rejected by processors for being below standards. Eleven Supervisors were employed in an endeavour to maintain uniformity in the application of the grades. A Provincial Supervisor co-ordinated the program between the three producing districts. Fees totalling \$93,879.46 covered the entire cost of this program.

SUMMARY OF OPERATIONS

	1961	1960	1959
Grading Commenced	August 1	0 August 4	August 4
Grading Finished	October 3	October :	October 20
Days of Operation	77	67	73
Graders Employed	144	140	144
Grading Platforms	59	69	69
Loads Graded (Received)	72,056	82,426	72,315
Loads Rejected	888	1,031	1,619
Average Grades % No. 1	61	64	61
% No. 2	37	35	37
% Culls	2	1	2

Carrot Grading - 490 loads of carrots for processing were graded at two receiving stations located at Clarkson and New Toronto. In addition several loads were inspected at shipping points in the Grand Bend, Thedford and Bradford Marshes. The average grades were No.1 - 95%, Undersize - 2%, and Culls - 3%. Favourable weather conditions prevailed during the harvesting season resulting in orderly delivery of a high quality crop.

Pea Grading - This work consisted of checking the operation of tenderometer instruments used by processors to determine the basis of payment to growers, on tenderness readings, as outlined in the marketing agreement. Observations were also made on the methods of sampling employed by company inspectors. Incorrect procedures were reported to the processor concerned and to the Vegetable Growers' Marketing Board. Several tenderometers were found to be unser-

viceable or inaccurate and corrections were made before such instruments were allowed back in service.

Asparagus Grading - At the request of the industry all asparagus for processing received by the Marketing Board in 1961 was inspected by Departmental graders. Processors can now be assured that asparagus purchased as No.1 Grade is up to required standards.

	SUMMARY OF OPERATIONS				
Area	No. of Receiving Stations	No. of Inspectors	No. of Loads Inspected	Loads Below Grade	Average % of Loads Below Grade
Western Ontario	3	5	8,909	142	1.59
Central Ontario	6	6	7,017	154	2.19
Collingwood	1	1	2,183	11	.50
Toronto	1	1	241	9	3.73
Totals	11	13	18,350	316	1.72

Asparagus found to be below No. 1 Grade was either returned to the grower for re-grading or accepted by the processor at the No.2 Grade price.

Strawberry Grading - Inspectors were located at the Norfolk Berry Growers' Co-operative, Simcoe, and at a receiving station at Dundurn to grade strawberries being delivered for processing. This program tends to maintain suitable processing quality.

Cherry Grading - Inspectors were located at two plants in the Niagara area to inspect sweet and sour cherries being delivered for processing. Cherries failing to meet requirements were rejected by processors.

Grading of Sweet Corn for Processing - The grading of sweet corn for processing study commmenced in 1960 was completed in 1961. Under the direction of Professor Franklin, O.A.C., the Farm Products Inspection Service provided three graders and some supervision as well as certain equipment. Although valuable information was obtained in the assessment of factors effecting the condition and quality of corn arriving at processing plants to main results of the experiment showed conclusively that sweet corn grading is not a practical method of determining quality.

Potato Grading - Potatoes for processing were graded at two processing plants, Salada-Shirriff-Horsey potato flake plant at Alliston (2,357 loads) and Federal Farms potato chip plant, Bradford (252 loads). Growers were paid on the basis of the percentage of No.1 Grade delivered according to contract, with a bonus for high specific gravity.

Onion & Carrot Grading - Bradford - The Onion Marketing Board and the Carrot Marketing Committee requested inspection of all carrots and onions being delivered by growers to repackers in the Bradford area. Growers were paid on the basis of the grading certificates issued by our inspectors.

Checking of Other Processing Crops - Upon request our inspectors checked other regulated fruit and vegetable crops for processing and settled grade disputes as provided for in marketing agreements.

INSPECTION OF HONEY

Our inspectional staff check honey produced in Ontario being offered for sale at wholesale and retail levels to ensure that the product is graded and classified according to the Honey Regulations. Honey packs were generally found to be satisfactory and only a few detentions were necessary.

LICENSING OF DEALERS

877 Fruit and Vegetable Dealer Licences and 2106 Truck Windshield Markers were issued during the fiscal year. Several cases of non-payment to growers for produce purchased were investigated and all were settled satisfactorily. It was not necessary to suspend or revoke any licences.

ACREAGE SURVEYS

The following surveys were conducted;

- 1. Marsh vegetable acreages at Bradford, Grand Bend, Thedford, Point Pelee, Erieau, Alfred and Moose Creek.
- 2. Provincial Greenhouse Survey (Horticultural Crops).
- 3. Potato acreage survey in the main production areas.

CONTROLLED-ATMOSPHERE APPLE STORAGES

21 C.A. apple storages were licensed comprising a total of 56 storage compartments, 4 of which failed to meet the requirements. 98 repackers were licensed and checked from time to time by our inspectors.

The Regulations were introduced by the industry to

- (1) Regulate the oxygen in C.A. compartments throughout the province at levels which would assure suitable quality of fruit over an extended season.
- (2) Provide proper identification of C.A. apples from registered storages and from licensed repackers.
- (3) Minimize the malpractices of blending cold storage apples with C.A. fruit as a protection to the trade and to consumers, and
- (4) Licence C.A. operators and repackers and to suspend licences where apples failed to meet requirements.

STATEMENT OF REVENUE

Type of Work	1961 - 62	1960 - 61
Inspection Certificates	\$ 33,990.75	\$ 34,881.75
Tomato Grading	93,879.46	104,893.47
Carrot Grading	1,359.00	516.00
Potato Grading	2,094.00	1,380.00
Onion Grading	1,092.50	_
Pear Grading	-	69.00
Peach Grading	42.00	_
Asparagus Grading	1,743.56	1,905.72
Cherry Grading	748.40	303.85
Strawberry Grading	696.70	414.15
Dealer Licences	10,838.50	11,151.36
Nursery Licences	365.35	327.40
C. A. Licences	203.45	200.15
Court Convictions	932.50	1,170.85
	\$ 147,977.17	\$ 157,213.70

THE PLANT DISEASES ACT AND RELATED WORK

The following work was carried on during the 1961-62 fiscal year by the Farm Products Inspection Services:-

- (a) Enforcement of regulations under The Plant Diseases Act respecting
 - (1) Plant disease inspection of nurseries and premises of dealers in nursery stock,
 - (2) Apple maggot inspection in requested plant disease control areas.
 - (3) Assisting the Crops Branch in enforcing bacterial ring rot regulations.
- (b) Variety certification of tree fruits in nurseries on request.
- (c) Raspberry certification on request of plant growers.
- (d) Assisting Vineland Experiment Station with Strawberry Certification for strawberry plant growers.
- (e) Assisting the Division of Plant Protection, Canada Department of Agriculture, with trapping, and control programme of Japanese Beetle.

The major part of this work is covered in a four month period during the growing season.

The technical and field work is guided by the Provincial Entomologist. The Director of The Farm Products Inspection Service accepts the responsibility of directing the administration and enforcement of The Plant Diseases Act. The Chief Inspector of Plant Diseases arranges the operation of various programs. A Senior Inspector carries on inspection and assists with the supervision of the staff required for such programs. The staff employed is a combination of permanent staff fruit and vegetable inspectors and casual employees.

APPLE MAGGOT INSPECTION

The usual June and late July inspections of apple maggot in plant disease control areas was carried out to determine whether apple orchards qualified for preharvest inspection through application of sprays and control of unsprayed trees and hawthorns in the area surrounding the orchards concerned. As a result of these inspections five orchards were rejected. The pre-harvest inspection in early September indicated that 235 growers operating 354 blocks of orchards showed infestation of apple maggot in one or more varieties in 132 blocks, or 38%.

INSPECTION OF NURSERY STOCK

Plant diseases found by the Canada Department of Agriculture during their survey of nurseries and dealers in nursery stock were reported to the Ontario Inspection Service, who took action to remove the incidence of disease. Some 72 trees infested with San Jose Scale in seven nursery blocks were removed and burnt. In addition, three additional blocks with some degree of infestation were dug up and removed from the nursery. Black Knot injury was removed from 50 trees. 290 nurserymen and 64 dealers in nursery stock were licensed under The Plant Diseases Act in 1961.

VARIETY IDENTIFICATION

Inspection of fruit trees in the nursery row for trueness-to-name of variety was carried out on request. In 16 nurseries approximately 375,000 trees were checked with percentage mixtures found to be 0.33% of the total inspected.

RASPBERRY CERTIFICATION

Fifty-five growers requested raspberry certification in 1961. Of this number 19 growers' plantings were refused certification. In the 16 approved plantings approximately 600,000 canes were passed as certified plants of which 565,000

were red raspberries and 35,000 purple raspberries. 6,419 certification tags were issued on request.

STRAWBERRY PLANT CERTIFICATION

The Strawberry Plant Certification program included two growers of Foundation stock and four growers producing Certified stock. An inspector of the Farm Products Inspection Service inspected plantings of Foundation and Certified plant growers during the growing season for isolation, control of insects and disease, and mixtures of varieties. Ten varieties were certified in 1961. Foundation tags and Certified tags were issued by the Horticultural Experiment Station, Vineland. Approximately 1,500,000 certified plants were available as a result of this program.

JAPANESE BEETLE PROGRAM

The Japanese Beetle population survey and control program was again carried on as a joint effort with the Plant Protection Division, Canada Department of Agriculture.

Seven trap attendants were provided by the Ontario inspection service during July, August and September to scout beetles and recover beetles from traps set out by the Plant Protection Division, in Hamilton, St. Catharines, Niagara Falls and Windsor. As a result of the trap operations a soil treating program was applied in three sections of Hamilton, two sections of Niagara Falls, one section of St. Catharines and a small area in Leamington. A total of 280 acres of turf were treated with 10% granular Dieldrin.

BACTERIAL RING ROT

Assistance was given to the Crops Branch in the enforcement of the bacterial ring rot regulations. Visits were made to growers' premises where ring rot had been previously reported, to ensure that all potatoes were disposed before January 31st and that the premises were properly disinfected.

FIRE BLIGHT

Some incidences of fire blight were noted on trees in a few nurseries in the Ottawa area and the affected material was removed at the time of inspection.

OTHER PLANT DISEASES

No cases of Little Peach, Peach Yellows, X-disease of peach were reported on nursery stock. The union bulb and stem nematode which appeared in the Leamington Marsh in 1958 appears to have been brought under complete control as no cases were reported during the 1961 season.

The Farm Products Marketing Board

THE FARM PRODUCTS MARKETING ACT

Marketing plans are the legally constitued means for collective bargaining or for directing single sales agencies for designated farm products. Each plan must provide for a definite program of marketing activities and must be supported by a plebiscite showing that at least 66-2/3 per cent of the producers voting are in favour of the plan.

A marketing plan is comprised of two parts. Part 1 is the plan. The plan is approved by the Lieutenant Governor in Council on the recommendation of the Minister of Agriculture. The plan is the framework. It constitutes the producer marketing board as the local board to administer the plan. It provides for the method by which the local board is to be elected. It defines the farm product or products to be regulated under the plan and the portions, if any, of the farm product to be exempt from the regulations of the plan. Part 2 comprises the regulations. The regulations are made by the Farm Products Marketing Board. They are the operational parts of the mechanics of the marketing plan. They define the extent of the regulations or control over the marketing of the regulated product. They provide for the collection of licence fees or service charges payable by the producer, on the sale of the regulated product or products to pay for the administrative or marketing expenses of the local board. Finally, the regulations set out the marketing powers delegated to the local board or to an agency of the local board to carry out the purposes of the plan.

Each marketing plan is administered by a local board of producers elected by the producers. Subject to the approval of the Farm Products Marketing Board, local boards operating collective bargaining type marketing plans are empowered to negotiate and fix agreements respecting minimum prices, forms of contract and conditions of sale; local boards directing single sales agencies are given full trading powers over the regulated farm products.

The functions of the Farm Products Marketing Board are receiving and analysing of requests from groups of producers seeking marketing plans; the development of plans and regulations with producers; the holding of plebiscites and recommendations following plebiscites. The Board has wide authority of investigation relating to the cost of producing and marketing any regulated farm product; prices, trade practices, management policies and other related matters.

On January 1, 1962 the Minister announced changes in the Membership of the Farm Products Marketing Board, which would provide for more direct producer representation. The present Board is constituted as follows:

Chairman - George A. McCague

Members - Gordon Greer Gordon Hill Alden McLean

W.C. Nickerson

Secretary - J.W. Drennan

In response to a petition from the Onion Growers' of the Province, the Board on September 30, 1961 conducted a plebiscite of the growers on a plan for marketing Onions. The vote carried by a 73.75% who favoured the Plan.

The producers of grain corn petitioned the Board asking that Grain Corn be brought under The Farm Products Marketing Act. A plebiscite was conducted by mail, in January 1962, on the following question: Are you in favour of the proposed plan to be known as "THE ONTARIO GRAIN CORN PRODUCERS' PLAN"? The

vote was declared lost as only 49.1% of the producers supported the proposed plan, whereas a 66.2/3% favourable vote was required.

There are now 14 plans in force under the Farm Products Marketing Act covering 27 crops as follows:

The Ontario Asparagus Growers' Marketing Plan, 1938

The Ontario Tender Fruit Growers' Marketing Plan, 1959

The Ontario Sugar Beet Growers' Marketing Plan, 1942

The Ontario Seed-Corn Growers' Marketing Plan, 1942

The Ontario Berry Growers' Marketing Plan, 1944

The Ontario Bean Growers' Marketing Plan, 1944

The Ontario Vegetable Growers' Marketing Plan, 1946

The Ontario Hog Producers' Marketing Plan, 1946

The Ontario Grape Growers' Marketing Plan, 1947

The Ontario Soya Bean Growers' Marketing Plan, 1949

The Ontario Fresh Peach Growers' Marketing Plan, 1954 The Ontario Flue-Cured Tobacco Growers' Marketing Plan, 1957

The Ontario Wheat Producers' Marketing Plan, 1958

The Ontario Onion Growers' Marketing Plan, 1961

Each plan operated in 1961 as follows:

THE ASPARAGUS PLAN

Some 852 growers sell asparagus annually to the canners in Ontario for processing. Only the processing industry is regulated, i.e. asparagus sold on the fresh vegetable market is exempt from the plan. After minimum prices and conditions of sale have been negotiated by the industry, a marketing agency appointed by the growers' local board sells all the asparagus purchased for processing, each growing district being allotted its share of the tonnage sold. An unique feature of this plan is an agreement by the growers to cease cutting when total orders have been filled. In this way, production is fitted to demand.

In 1961, 1800 tons of asparagus were sold for processing at a total value of \$628,981.00. This compares with 1914 tons valued at \$692,8255.00 for processing in 1960.

Asparagus minimum prices in 1961 compared with 1960 were:

196	01	196	0
Select Grade	26 ¢ per 1b.	Select Grade	26 ¢ per 1b.
No. 1 Grade	19¢ per 1b.	No.1 Grade	19 ¢ per lb.
No. 2 Grade	131/2 e per lb	No. 2 Grade	131/2 o ner 1h

THE TENDER FRUIT PLAN

Some 2,700 growers sold 11,891 tons of sour cherries valued at \$2,292,125.00; 1,216 tons of sweet cherries valued at \$327,146.00; 2,749 tons of plums and prunes valued at \$208,849.00; 6,476 tons of Bartlett pears valued at \$751,216.00; 8,672 tons of Kieffer pears valued at \$485,632.00, and 31,538 tons of peaches valued at \$2,901,496.00, or a total of 62,542 tons valued at \$6,966,464.00 sold for processing in 1961.

This compares with 4,901 tons of sour cherries valued at \$991,900.00; 695 tons of sweet cherries valued at \$180,817.00; 1,683 tons of plums and prunes valued at \$125,148.00; 6,461 tons of Bartlett pears valued at \$743,397.00; 11,869 tons of Kieffer pears valued at \$675,603.00; and 20,557 tons of peaches valued at \$2,177,531.00; or a total of 46,166 tons valued at \$4,894,396.00 sold for pro-

cessing in 1960.

Cherry, plum, pear and peach minimum prices in 1961 compared with 1960 were:

	1961	1960
Sour Cherries	\$ 190.50 per ton	\$ 200.50 per ton
Sweet Cherries		
White and similar varieties	260.50 ", ",	260.50 " "
Black and similar varieties	280.50 " "	280.50 '' ''
Plums		
Damson variety	80.50 '' ''	80.50 " "
Jam types	63.00 '' ''	63.50 " "
Prunes	80.50 '' ''	80.50 " "
	00.50	00.00
Bartlett Pears 2" and up	108.50 " "	115.50 '' ''
Bartlett Pears 1-3/4" to 2"	63.50 '' ''	70.50 '' ''
Kieffer Pears 2-1/16" and up	57.00 '' ''	59.00 '' ''
prior to October 31st		
Kieffer Pears 1-3/4" to 2/16"	33.00 '' ''	35.00 "" "
prior to October 31st		
Kieffer Pears 2-1/16" and up after October 31st	62.00 '' ''	64.00 '' ''
Kieffer Pears 1-3/4" to 2/16"	38.00 '' ''	40.00 '' ''
after October 31st	36.00	40.00 '' ''
Pears other than Bartlett or	63.50 '' ''	70.50 '' ''
Kieffer varieties	00.00	10.00
Peaches		
Jubilee	94.00 '' ''	105.50 " "
Elbertas	94.00 '' ''	105.50 " "
"V" type and other varieties	89.00 '' ''	105.50 ""

THE SUGAR BEET PLAN

In 1961 some 1228 growers delivered 278,842 tons of sugar beets produced from 16,353 acres. This compares with 211,908 tons of sugar beets produced from 14,258 acres by 1,171 growers in 1960. Average yield per acre in 1961 was 17.05 tons per acre compared to 14.86 tons in 1960. Total estimated value of sugar beets to growers in 1961 was \$3,276,000.00. Average sugar content in 1961 was 14.70 per cent compared to 16.55 per cent in 1960. Average estimated price delivered plant to grower was \$11.70 per ton for 1961 compared to \$13.83 per ton in 1960.

In 1961 a temporary emergency in world sugar prices caused some doubt about the usual pricing formulas to bring stability to the sugar beet industry, therefore, a three way agreement was substituted in Ontario based on \$13.00 per ton minimum for sugar beets with 16% sugar content. Since the average test was lower than this, the guaranteed price average was \$11.70 per ton, of this the Province paid 50 cent per ton and the Company pay a price based upon the sale value of the sugar. The Government of Canada will make up the difference in the \$11.70 price in subsidy payments.

THE SEED CORN PLAN

Early Golden Glow)

Early Golden Glow

Other Dents (including

The membership of this marketing group is comprised of some 109 hybrid and open-pollinated corn growers in South-western Ontario who specialize in the production of corn for seed.

Through negotiation between the grower and the dealer, a base price is established for dried commercial corn to which a premium is added to arrive at a minimum price to the grower for corn for seed. The base price is the Chicago May corn future daily closing price (subject to the current rate of exchange) a bushel average for the three months, December, January and February in each year. The base price for the 1961 crop was \$1.65 per bushel, 15.5 per cent moisture, and for the 1960 crop was \$1.64 per bushel, 15.5 per cent moisture. Acres planted to hybrid and open-pollinated corn for seed in 1961 totalled 4296 and 83 respectively, compared to 3,711 and 402 respectively in 1960.

In 1961, 251,490 bushels approximately of hybrid corn for seed and 3,877 bushels approximately of open-pollinated corn for seed were produced compared with 215,756 bushels of hybrid corn for seed and 18,826 of open-pollinated corn for seed produced in 1960. Farm value of the crop totalled \$438,610 for hybrid

and \$6,877 for open-pollinated corn for seed in 1961, compared to \$375,279 for hybrid and \$33,149 for open-pollinated corn for seed in 1960. The minimum prices for hybrid corn for seed and for open-pollinated corn for seed in 1960 compared to 1960 were:				
	1961	1960		
HYBRID CORN FOR SEED SHEDULES A, B, C, D	The base price and a non the base price also costs when assumed by			
(a) Dealer supplies the seed and detassles the corn. Grower delivers the corn on the cob to the dealer	\$1.65 per bus.	\$1.64 per bus.		
(b) Growers supplies the seed detassles and delivers the corn on the cob to the dealer	d, \$1.65 per bus. 8 .52-1/2 " " = \$2.17-1/2 " "	\$1.64 per bus. & .52-1/2 '' '' = \$2.16-1/2 '' ''		
(c) Grower supplies the seed, detassles, dries, shells and delivers the dried shelled corn to the dealer.	in 1961)	\$1.64 per bus. & .87-1/2 '' '' \$2.51-1/2 '' ''		
OPEN - POLLINATED CORN FOR SEED SCHEDULE E	The base price and a mon the base price also for certain varieties.	ninimum premium of 40¢ additional allowances		
Yellow Dents (other than	\$1.65 per bus.	\$1.64 per bus.		

\$1.65

\$1.75

.10

per bus. &

22 22

per bus.

\$1.64

\$1.74

.10

per bus. &

22 22

per bus.

1060

Flints	\$1.65	per bus. &	\$1.64	per bus.
	.50	22 22	.50	29 22
	\$2.15	per bus.	\$2.14	per bus.

THE BERRY PLAN

Some 900 growers sold 2,783,822 quarts of strawberries valued at \$555,781.00; 839,718 quarts of red raspberries valued at \$247,798.00 and 290,699 quarts of purple raspberried valued at \$78,439.00; or a total of 3,914,239 quarts valued at \$882,018.00 for processing in 1961. This compares with 3,246,929 quarts of strawberries valued at \$556,026.00; 485,989 quarts of red raspberries valued at \$149,584.00 and 286,635 quarts of purple raspberries valued at \$82,622.00 or a total of 4,019,553 quarts valued at \$788,232.00 sold for processing in 1960.

Strawberries and raspberries minimum prices in 1961 compared with 1960

1961

were:

Strawberries	17	cent per	qt.	box	17	cent	per d	qt.	box

Raspberries

Red	Open market	Open market
Purple	27 cent per qt. box	27 cent per qt box

THE BEAN PLAN

White bean production in 1961 from an acreage of 65,000 produced 1,200,000 bushels for an average yield per acre of 19 bushels, a marked increase from the 1960 crop of 990,000 bushels from 66,000 acres for an average yield of only 15 bushels per acre.

The 1961 minimum price to the growers arrived at by negotiation was as follows:

for all beans delivered on or before the 31st of December, 1961, the minimum price shall be \$6.25 per 100 pounds, and

for all beans delivered from and including the 1st day of January, 1962, to and including the 14th day of August, 1962 the minium price shall be \$6.40 per 100 pounds.

The above prices are, an increase of 25 cent per 100 pounds over the 1960 crop.

A graduated scale of charges by dealers for grading and picking beans for the growers in excess of two per cent damage and in excess of 18 per cent moisture was negotiated and established.

The levy deducted from the growers to support the minimum price in each year is 77 cents per hundredweight in addition to the regular eight cents per hundredweight licence fee for administration purposes, Out of the support levy, 70 cents hundredweight on the 1960 crop was returned to the growers and although 250,000 bushels have been exported this year, it is anticipated that 70 cents per hundredweight will again be returned to the producers.

THE VEGETABLE PLAN

Some 6,570 growers sold 290,606 tons of tomatoes valued at \$10,519,947.00; 26,490 tons of green peas valued at \$2,652,059.00; 99,262 tons of sweet corn valued \$2,604,955,00; 3,328 tons of green or wax beans valued at \$367,248.00; 5,307

tons of beets valued at \$182,037.00; 6,497 tons of cabbage valued at \$94,386.00; 10,490 tons of carrots valued at \$346,106.00; 11.315 tons of pumpkins and squash valued at \$113,710.00; and 1,132 tons of lima beans valued at \$118,618.00, for processing in 1961 or a total of 454,427 tons of vegetables valued at \$16,999,956.00. No long green cucumbers were sold for processing in 1961. This compares with 335,591 tons of tomatoes valued at \$12,343,873.00; 23,364 tons of green peas valued at \$2,419,584.00; 82,894 tons of sweet corn valued at \$2,160,506.00; 2,969 tons of green wax beans valued at \$320,643.00; 8,675 tons of beets valued at \$295,214.00; 6,904 tons of cabbage valued at \$104,087.00; 13,070 tons of carrots valued at \$349,340.00; 11,743 tons of pumpkin and squash valued at \$119,884,00; 755 tons of lima beans valued at \$88,018.00, and 28 tons of long green cucumbers valued at \$1,032.00 for processing in 1960, or a total tonnage of 485,993 of vegetables valued at \$18,202,181.00.

Minimum prices for 1961 compared with 1960 were as follows:

	1961	1960
Tomatoes No.1 No.2	\$ 41.50 per ton 25.50 " "	\$ 41.50 per ton 25.50 " "
Green Peas - graded average of tenderometer readings		
0 - 80 81 - 85	175.00 '' '' 150.00 '' ''	175.00 '' '' 150.00 '' ''
126 - and up	84.00 '' ''	84.00 '' ''
Sweet Corn	26.00 "" "	26.00 '' ''
Green or Wax Beans	109.00 '' ''	109.00 '' ''
Beets (a) for beets graded by the processor		
3/4" to 1-1/4" diameter 1-1/4" to 1-3/4" diameter	71.00 '' '' 42.00 '' ''	71.00 '' ''
1-3/4" to $1-3/4$ " diameter $1-3/4$ " to $2-1/2$ " "	30.00 " "	42.00 '' '' 30.00 '' ''
2-1/2" to 4-1/2"	15.00 '' ''	15.00 '' ''
(b) for ungraded beets 1-1/2" diameter and up	24.00 '' ''	24.00 '' ''
Cabbage	13.50 '' ''	14.00 '' ''
Carrots (a) ungraded minimum diameter		
1-1/4" June 25th to August 15th	52.00 '' ''	52.00 '' ''
(b) ungraded minimum diameter 1-1/2" August 16th to August 31st	35.00 '' ''	35.00 '' ''
(c) ungraded minimum diameter 1-1/2" September 1st to September 15th	28.00 '' ''	28.00 '' ''
(d) ungraded minimum diameter 1-1/2" September 16th to November 10th	24.00 '' ''	24.00 11 11
TOVELLIBET TOUR	24.00 //	24.00 '' ''

(e) ungraded minimum diameter 1-1/2" November 11th to March 31	27.00 '' ''	27.00 "	,,
Lima Beans	107.00 '' ''	107.00 ''	2.2
Pumpkin and Squash	10.00 '' ''	10.00 ''	2.2
Long Green Cucumbers			
No. 1	(None processed	45.00 ''	2.2
No. 2	1961)	10.00 "	2.2

THE HOG PLAN

Changes planned in 1960 in the organization and operation of the Ontario Hog Producers' Marketing Plan came into effect in 1961. Agency authority is now vested in the Ontario Hog Producers' Marketing Boardthus terminating the Ontario Hog Producers' Co-operative as the marketing agency.

With the expanded duties of the Ontario Hog Producers' Marketing Board the membership of that board was increased to 14 members. The new election procedure continues with eleven districts or zones. Producers in each county elect committeemen on a basis of production and numbers of producers. The committeemen for each of the eleven districts then elect their respective director. The full body of committeemen than elect from among themselves the three additional directors to complete the 14-member board of directors.

The teletype method of selling hogs came into operation May 8, 1961. This method of sale embodies 5 basic principles:

- 1. Sales are completely open to public view.
- 2. Every buyer has the opportunity to bid on each lot of hogs offered.
- 3. Hogs are sold to the highest bidder.
- 4. There is a complete and permanent record of all transactions.
- 5. The agency has the privilege of exercising the reserve bid.

This system of selling is unique. In operation now approximately one year it appears to provide those aspects of competitive bidding that are major considerations in any sales method.

During the year a Hog Industry Advisory Committee was established. The members of this committee represent producers and processors who meet monthly under the chairmanship of a member of the Farm Products Marketing Board. The activities of the committee are aimed at promoting better understanding between producers and other links in the producer-marketing chain. The committee discusses matters relating to the marketing of hogs in the interests of an efficient program.

The employment of producer funds in the development of county activities, including quality improvement, is being reflected in many projects which will benefit producers and the industry.

THE GRAPE PLAN

Some 825 growers marketed 31,995 tons of grapes valued at \$3,214,927.00 for

processing in 1961. This compares with 37,899 tons of grapes valued at \$3,645,294.00 sold for processing in 1960.

Grape minimum prices in 1961 compared with 1960 were:

1961 \$ 96.00 per ton \$ 95.00 per ton

1960

THE SOYA BEAN PLAN

Acreage planted in 1961 was substantially the same as the 256,000 in 1960. In 1961 the planted acreage produced 8,650,000 bushels, for an average yield per acre of 33.6 bushels, compared to 5,669,000 bushels for an average yield per acre of 22.1 bushels in 1960.

This plan is similar to the other negotiation type cash crop plans, except that the market for soya beans is limited to a few processors, and that Canada is still less than 50 per cent self-sufficient in its production of soya beans for its combined soya oil and meal requirements. Soya beans, soya meal and soya bean oil for industrial purposes and canning sardines are imported free of duty; soya bean oil for edible purposes is imported at a 20 per cent tariff rate. The cost of soya beans to Ontario processors must at all times be competitive with the delivered cost of foreign soya beans, soya bean oil and a host of other competing edible oils. The plan is supported by means of a licence fee of one cent per bushel paid by the producer to the Board at the time the soya beans are sold. A dealer's maximum charge of 10 cents per bushel to the grower for cleaning, handling and selling soya beans, which due to competition between the dealers is seldom charged in full, and a discount of 2-1/2 cents per bushel for each onehalf per cent moisture content over 14 per cent to cover shrink and drying expenses with cash to be paid by the dealer to the grower for all soya beans on delivery were the main terms of contract negotiated and established under the plan.

Representations were again made by the Ontario Soya Bean Growers' Marketing Board to the Government of Canada for a support price on soya beans in an effort to increase or at least maintain present production of soya beans. The Government of Canada approved a support price of \$2.13 per bushel to the grower on the 1961 crop on a deficiency payment basis. This was an increase of 13 cent per bushel over the support price on the 1960 crop.

THE FRESH PEACH PLAN

The operations of this plan were changed very little from the 1960 season. The board established the minimum fresh peach f. o. b. shipping point price. The shippers were licensed as agents of the growers to sell on behalf of the growers. From the established price the shipper deducted the fees of the local board and the shippers handling charges. Maximum handling charges of 8 cent per basket or 32 cent per master container were set by the board.

Due to ideal growing and harvesting contitions the 1961 crop of peaches was almost double that of 1960. Volume moving through shippers platforms was 30,506,000 pounds compared to 16,839,083 in 1960 and 20,848,998 in 1959. As a result of the increased volume some difficulty was encountered in maintaining a price in 1961 and there were repeated instances of price cutting which resulted in charges being laid against the offending parties.

THE WINTER WHEAT PLAN

The Ontario Wheat Producers' Marketing Plan has now experienced 4 crop years of operation, featured by one of the lightest crops on record in 1959 with a return to a good quality but rather low yielding crop in 1960; to a crop in 1961 that was subject to most unsatisfactory harvest time weather in some areas, with a resultant serious reduction in both yield and quality of what promised to be a high yield, good quality wheat year.

While the winter wheat marketing plan is of the negotiating type, it also includes provision for an equalization fee of nine cents per bushel paid by the producer to establish a price support fund to assist in the disposal of wheat surplus to domestic requirements. The unused portion of this fee is returned to the producers at the end of each crop year.

The 1961 crop, resulted in a production of 19,525,000 bushels from 550,000 acres, for an average yield of 35.5 bushels per acre.

Negotiations for the 1961 crop indicated that producers and buyers anticipated a better crop than that harvested in 1960, and minimum prices were established at substantially the same price level as the previous year. The services of the Grain Marketing Division, United Co-operative of Ontario, were again engaged and charged with the responsibility of exporting wheat for the account of the Board. The deduction of nine cents per bushel equalization fee, along with the one cent per bushel licence fee (a total of 10 cents per bushel), was continued in 1961.

Present indications are that a considerable portion of the nine cents per bushel equalization fee will be used to take up the loss incurred in export on the portion of the 1961 crop surplus to the domestic market.

The Minimum prices already referred to were on the following basis:

July 1961	\$1.40	January 1962	\$1.48
August 1961	1.40	February 1962	1.50
September 1961	1.40	March 1962	1.50
October 1961	1.42	April 1962	1.50
November 1961	1.44	May 1962	1.45
December 1961	1.46	June 1962	1.40

The local board agreed to purchase wheat at the above prices from licensed dealers allowing a handling charge of 10 cents per bushel, and to date have accepted offering of in excess of 1,600,000 bushels. Moisture discounts of 2-1/2 cents per bushel for each one-half per cent of moisture over 14 per cent were provided for, together with a grade discount of three cents per bushel for Grade No. 3 C.E. A maximum handling charge of 10 cents per bushel is allowed the dealer.

Competition between dealers frequently results in a lower charge being made on the producer.

THE FLUE-CURED TOBACCO PLAN

Highlight of the 1961 flue-cured tobacco crop was a close repeat of the 1960 record crop. Unusually small losses from hail, frost and drought contributed to the abnormally high production approximately 192 million pounds, particularly when the 1961 marketable acreage quota was set for an anticipated crop of 175 million pounds. The same factors plus freedom from blight brought about the record crop of just under 200 million pounds in 1960 when the marketable acreage quota was set for an anticipated crop of 170 million pounds.

The 1961 crop is expected to yield 155 pounds per acre, will be sold for an

average of 52.5 cents per pound to the growers and for a dollar return of some \$100,800,000.00. The 1960 crop yielded 1608 pounds per acre, sold for an average of 55.10 cents per pound and for a dollar return of \$109,595,646.00 to the growers.

The quality of the 1961 crop was good but fell below the 1960 crop and well below the high quality crop of 1959. Abundance of rain before and during the harvesting of the 1961 crop leached most of the plant food from the soil. This resulted in a lot of thin leaf tobacco, particularly in the cutter grades.

In review, 1961 was about as eventful a year in flue tobacco marketing in Ontario as 1957. In attempting to assess what happened, it is interesting to recall the 1957 crop of some 148 million pounds was small, the stock on hand were low and the demand good. The 1958 crop of 173 million pounds was large, but was badly damaged by spray material for sucker control and sold at low price. The extremely high quality 1959 crop of 145 million pounds suffered serious frost damage and turned out light. The all-time record crop in 1960 of 198 million pounds of good quality, coming on top of earlier demands by tobacco buyers for more tobacco, resulted in some domestic buyers having to purchase considerably in excess of their anticipated requirements. In order to operate at top efficiency, the buyers insisted on one million pounds being offered daily on each of the three exchanges. With this done, the buyers had to take the offerings. The 1961 crop at near record levels came on a market with domestic stocks now high and demand low. It resulted in the largest poundage of no sale tobacco being experienced since the whole crop barn system of sale was abolished in Ontario in 1959. The average daily volume of sales on the three exchanges was less then 1.5 million pounds, compared to 2.4 million pounds in 1960, and caused an alarming increase in the cost of market operations together with added expense and concern to the growers in taking tobacco home and re-working large quantities before it could be offered for sale again.

In an effort to meet the situation, a plebiscite was authorized by the Farm Products Marketing Board on March 3rd, 1962, on the question of two cent per pound levy being imposed on the 1961 crop with the proceeds to be used by the Flue-Cured Tobacco Growers' Marketing Board to take off the market all the no sale tobacco at the established minimum grade prices and to pack and sell this tobacco in re-dried form at a later date. The Government of Ontario agreed to gurantee the necessary bank credits on behalf of the Ontario Flue-Cured Tobacco Growers' Marketing Board to take care of any deficit after the growers' levy had been exhausted arising from the operation if the plebiscite succeeded. Due to confusion and misunderstanding between those growers who had sold most of their tobacco offered to-date and those who had not been so successful, the plebiscite failed to obtain the required favourable majority of 66.67 per cent of those voting. Some 56.67 per cent of the 81.44 per cent of the growers who voted were in favour.

Faced with this result, the ruinous cost of market operations and the quantity of unsold tobacco remaining on the market, the Ontario Flue-Cured Tobacco Growers' Marketing Board applied to the Canada Department of Agriculture for assistance under the Agricultural Co-operative Marketing Act. Agreement was reached on the basis of bank guarantees by the Government of Canada to the banks on behalf of the Ontario Flue-Cured Tobacco Growers' Marketing Board of 80 per cent of the average of eachgrade price of flue tobacco paid for the preceding three years, plus 2-3/4 cents per pound green weight of the tobacco marketed under this arrangement for carrying charges, storage and interest on overdraft resulting from the advance payments made to the growers. A small number of flue tobacco grades established recently carry a slightly smaller percentage guar-

antee. At time of writing it is estimated there may be a total of 8 million pounds packed from the 1961 crop for the account of the Ontario Flue-Cured Tobacco Growers' Marketing Board.

THE ONION PLAN

Following a 73.75% favourable vote of those voting on September 30th, 1961 this plan was approved just prior to the opening of the marketing season for mature onions produced from seed. A full central sales agency type of marketing plan through licensed dealers was operated by the Ontario Onion Growers' Marketing Board. During its first year this local board marketed 477,409 - 50 lb. bags of onions and returned to the growers \$874,718.88. Total cost of operation of the marketing plan to the growers was \$23,494.01.

One pool was operated for the entire season with two interim and one final payment made to the growers which totalled \$1.91 per 50 lb. 1-3/4" onions. In addition premiums were paid for 2-1/2" and 2-3/4" jumbo onions and for storage.

The highlight of the year was the shipment of 150,000 bages of high quality onions by the local board to the United Kingdom - a first for Onion export trade to this market from Ontario.

THE GRAIN ELEVATOR STORAGE ACT

Ontario grain dealers accepting grainfrom producers for storage for the producers' account are required each year to be licensed to store grain and to comply with the terms of the Grain Elevator Storage Act.

The purpose of the Act is to ensure that the licensed grain dealer has sufficient grain on hand or acceptable warehouse receipts to cover all storage grain and to require that at no time shall the licensed grain dealer use or pledge farmer stored grain for his own account.

The practice of Ontario cash grain growers of making delivery of wheat, soya beans, corn, and white beans to the elevator operator at harvest time and arranging for storage in order to sell at a future date has developed to the point where most grain dealers now provide this service. A periodic inspection of the storage facilities, general elevator conditions, and insurance coverage, together with a verification of the record of stored grain against stocks on hand for the account of the producers is provided for and carried out in the administration of Grain Elevator Storage Act.

Producers of the cash grain crops are apparently heeding the suggestion of the grain marketing boards to withhold from the market a portion of their crop, resulting in 1961 storage of Ontario Wheatfor the account of the producer slightly in excess of 1,000,000 bushels, soya beans 700,000 bushels and white beans 100,000 bushels.

Field Crops Branch

Record crop yields were broken in 1961 for grain corn, soybeans, sugar beets, potatoes and hay. In 1958, records were established in winter wheat, spring wheat, oats, barley, mixed grains and rye indicating a distinct trend towards progress and efficiency in crop production.

For the year August 1, 1960, to July 31, 1961, a total of 1,084,359 tons of cereals, screenings and mill feeds moved into Ontario from Western Canada under subsidy. This consisted of tons as follows: wheat, 228,210; oats, 265,472; barley, 373,344; screenings, 40,425; mill feeds, 176,908. The figure for the previous year was 995,726 tons and for the year before, 1,042,594. Total value of field crops exclusive of tobacco, fruits and vegetables was \$350,997,700 for the year, compared to \$312,708,000 in 1960.

There was a distinct trent towards increased production of corn, both for grain and for silage. Marked progress is also being made particularly in pasture and forage improvement.

AGRICULTURAL LIMESTONE ASSISTANCE POLICY

This policy was continued on the same terms as the previous year, in co-operation with railways and the Federal Department of Agriculture. The Committee approved twelve sources of supply on the basis of the following terms of transportation assistance:

Old Ontario

Carlots

- 75 per cent of freight up to \$2.50 per ton;

Truck Loads

- Five cents per ton per mile one way from quarry to farm. up to \$2.50 per ton:

Northern Ontario

Carlots

- 75 per cent of "reduced" freight:

Truck Loads - 75 per cent of "reduced" freight less 50 cents per ton.

A total of \$59,466.85 was paid on movement of 32,115 tons, of which 31,521 tons were moved by truck and 593 tons by rail. This compares with a high of 51,941 tons in 1953. Only 12 carloads moved in 1961, as compared to a high of 538 carloads in 1949.

Counties and districts took advantage of this policy in the following order: Kent, Essex, Prescott, Welland, Lincoln, Elgin, Haldimand and Russel.

SEED DRILL SURVEY

Some 546 samples of cereal grains and small seeds were collected from the farmers of Northern Ontario as a check on the varieties used, grade of seed, and seed cleaning practices. Area covered was the Districts of Algoma, Kenora, Manitoulin, Rainy River, Sudbury, Thunder Bay, Temiskaming and Cochrane, North, West and South. Samples were graded on the basis of Canada No. 1 seed with regard to weed content and germination. The purpose of the survey is to promote the use of better seed by acquainting the farmer with the seed testing service and showing how his seed compares with other lots in the district.

Comparison of Former Northern Ontario Surveys

Year	No. 1	No. 2	No. 3	Rejected
1956	53%	12%	10%	25%

1961	45%	21%	1%	33%

Comparison of Former Ontario Surveys

	Year	No. 1	No. 2	No. 3	Rejected
Eastern	1958	49%	10%	10%	31%
Central	1959	59%	11%	12%	17%
Western & S.W.	1960	56%	12%	11%	20%
Northern	1961	45%	21%	1%	33%

A detailed report was prepared and distributed.

MAJOR SEED SHOWS

ROYAL AGRICULTURAL WINTER FAIR

Three World Trophies, one Championship and nine Reserves came to Ontario, as well as a large number of other prizes in 1961:

World Trophies

Rye	Harry N. Gorsline, Demorestville
Soybeans	W.R. Sifton, R.R. 1, Ridgetown
Tobacco	Gene Winter, Langton

Championships

Dealis Toulet Found Inglian, 11,11, 0, Dealor	Beans Ro	obert Fotheringham, R.R. 8. Seafor
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Reserves

Winter Wheat	Ken Peacock, R.R. 1, Stayner
Two-Rowed Barley	J.E. French, Mitchell
Six-Rowed Barley	Norman J. Schmidt, Mildmay
Rye	Major F.E. Fleming, Barryvale
Small Seeded Legume	L.W. King, R.R. 3, Tottenham
Tobacco	John Malo, R.R. 4, Simcoe
Beans	Angus P. McLean, R.R. 7, Parkhill
Silage	Norman Schmidt, Mildmay
Sweet Corn	Jack Harris, R.R. 1, Thamesville

Staff members took active parts on committees for seed shows, encouragement of exhibitors, publicity, etc.

THE ONTARIO SOIL AND CROP IMPROVEMENT ASSOCIATION

Fifty-six branches in as many counties and districts had total receipts of \$106,444.57, with expenditures of \$77,181.93. Only one branch had a deficit. The average paid-up individual membership for forty-eight branches was 105, not including branches where all farmers were collectively made members. Each branch may receive up to five hundred dollars from the Department for approved projects.

COMMITTEES AND AFFILIATIONS

Eighteen farmer directors are appointed by area branches to represent as many districts. Directors elect an executive. Active committees give special attention to production and marketing of special crop items.

The Ontario Soil and Crop Improvement Association holds membership or representation on Ontario Federation of Agriculture, Ontario Conservation Council, Advisory Fertilizer Board, Ontario Potato Growers Association, Royal Agricultural Winter Fair, Ottawa Winter Fair, Western Fair, Ontario Beef Pasture Improvement Committee, Canadian Horticultural Council, and Ontario Corn Committee.

ANNUAL MEETING

This is always an annual highlight of this organization. In recent years, the three-day event has been held in co-operation with the annual farm equipment show of the Canada Farm and Industrial Equipment Trade Show. Official delegates represent each local branch, with an obligation to "take back" information to local groups. In addition, large numbers of rural people attend, either as commuters or for the duration. The program consists of reports, panels and addresses by outstanding participants, leaders and authorities. Educational displays are featured. There are separate sessions for registered seed, potato and turnip growers. An unusually large crowd is present on the second day regardless of weather conditions. At this time, W. P. Watson, now Chief, Production and Extension Division, and formerly Livestock Commissioner, has given for sixteen consecutive years, a complete summary of the agricultural situation for the current year.

Addresses and Proceedings are prepared in booklet form, and 9,500 copies are widely distributed.

ENCOURAGEMENT TO JUNIORS

The Ontario Soil and Crop Improvement Association is privileged to offer each year the following trophies for the encouragement of young people in field crop work:

4-H Grain Club Challenge Trophy (Ontario Championship);

4-H Potato Club Challenge Trophy (Ontario Championship);

Championship awards in the Agronomy sections at Ontario Agricultural College, Guelph; Western Ontario Agricultural School, Ridgetown, and Kemptville Agricultural School, Kemptville.

AWARDS OF MERIT

The following were selected to receive certificates this year, in recognition of outstanding service to agriculture, with particular interest to field crops; Lawrence Kerr, Chatham; Ed. G. Snyder, Preston; J.J. Johnson, London; Dr. D. N. Huntley, Guelph; Stanley Wightman, Lancaster.

The Master Seed Potato Grower's Award for the year went to Chas. Proudfoot, Vankleek Hill. Mr. Proudfoot has a long list of accomplishments and achievements to his credit.

SEED FAIRS

Thirty-four seed fairs were held by branches. Many of these took the form of a spring show or crop day. Special programs attracted the interest of farmers in large numbers. Large quantities of seed were displayed and changed ownership. Panel discussions were often featured, and classes for hay and silage were especially well filled.

Number of Seed	d Fairs		36
Total Prize Mo	ney Paid	ess	\$11623.30
Total Exhibitor	s		1509
Total Entries		per per	7840
Total Attendance	ce	-	26705
Cereal Seed Of	fered for Sale	, and	25717 bus.
Forage Seed Of	fered for Sale		19433 lbs.
Seed Potatoes (Offered for Sale (75-lb. bags)	_	35790 bags

JOINT PROJECTS

In co-operation with the institutions and various departments, groups of adjacent counties jointly plan projects and demonstrations, some being on a long-term basis. Instigated a few years ago, the program is proving successful.

TREFOIL DEMONSTRATION PROJECTS

This project was begun in 1961, with the object of demonstrating recognized practices in establishing successful stands of trefoil. A second purpose was to establish the place of this long-term legume on soil types not suitable for alfalfa or in field not included in short rotations.

Fifty-six farmers in as many counties and districts co-operated in this project, with a total of 317 acres established. Observations in the fall of 1961 showed wide differences in thickness of stand, but no apparent failures. This project is being continued in 1962.

WIDE VARIETY OF DEMONSTRATIONS

The Ontario Soil and Crop Improvement Association provides annually over 1300 co-operators who assists in conducting a wide variety of projects scattered over almost every township in Ontario. The following few illustrations will serve to show the great variety of projects carried on by local branches:

A great many counties carried on weed control demonstrations. Kent applied Embutox to birdsfoot and ladino without injury to the legumes and got a nearly one-hundred-per-cent kill of Canada and Scotch thistles. This county has also come to the conclusion that continuous corn and continuous spraying with Atrazine is almost certain to control nut-grass and quack.

Lambton found that manganese suphate at five to fifteen pounds per acre in twenty gallons of water brought soybeans out of magnesium deficiency and increased yields more than enough to pay for the materials.

Brant organized a bus tour; Middlesex is noted for the size of its twilight field tours; Dufferin had three hundred farmers participate in a winter tour of the county to see cattle feeding methods, loose housing, etc.; Brant had a corn day, with three hundred out; Algoma had a forage day with 450 in attendance; Oxford not only sponsored a Provincial Hay Show but also participated in three tours, one of which went to Ohio; and Peterborough had a tour to Pennsylvania.

Carleton found that Sudax, the hybrid Sudan-sorghum, grew rapidly in hot weather and attained a height of nearly six feet at both first and second cuttings. It appears to be a valuable crop for supplementary pasture and for silage.

York County probably had the largest annual meeting. North Simcoe has the largest membership - 450.

Elgin found the cost of growing oats at 55 bushels per acre to be thirty-three

dollars per acre. Grenville and many other Eastern counties held drainage days. Leeds and Norfolk found Saratoga brome to be more vigorous than other types and particularly for aftermath. Bloat seems to have been overcome by feeding penicillin salt at one ounce per cow per day.

Ontario County provides a scholarship for attendance at O.A.C. short course, and eleven of the contestants in the 500-Bushel Potato Club had yields of over

five hundred bushels per acre.

Many counties had schools for weed sprayer operators.

The 1961 Renfrew seed show had 131 entries. Renfrew forwarded 458 soil samples for analysis. Wellington also boasts a growing seed show, with 240 entries and 52 in the seed judging competition. Wellington, Waterloo, Middlesex, Huron and other counties have a special field crop or seed show edition of a local paper.

Many counties hold high yield contests. Oxford, for instance, has 100 farmers

entered in its competitions.

HIGH YIELD COMPETITIONS

Third

The Ontario Pasture Competition

- Lawrence Markusse, Wyoming

Ontario Pasture King - Clifford Wightman, Lancaster

Runner-up - Herb. Waechter, Mildmay

Fourth - Clarence Sims, Cameron

Fifth - Fred Nurse, Georgetown

There were 875 farms entered in thirty-eight counties and nine districts. The Canadian Seed Trade Association and Cyanamid of Canada sponsored the competition at the provincial and zone levels respectively. The Ontario Plant Food Council and others contributed generously at the county level.

500-BUSHEL POTATO CLUBS

With 149 growers competing in eight 500-Bushel Potato Clubs, Delbert Olan, Millbrook, Durham County, took the honours for top yield with 726 bushels per acre of the Netted Gem variety, testing 19.5 per cent dry matter. Fifty-four growers had yields of over 500 bushels per acre, and the average for all growers in the contests was 443 bushels.

SEED CLEANING PLANTS AND SCHOOL FOR SEED PROCESSORS

Licenses were issued through this branch for 412 seed cleaning plants for the year, as compared to 413 the previous year. Twenty-five were not for hire.

A specially qualified member of the staff visited 137 of these plants on an inspection basis. Some 158 calls were made to other plants to give assistance or to check on operations.

Fifty seed processors were given a two-day course in seed processing and other related aspects of seed handling.

Instruction was also given to students in degree and diploma courses in Agriculture. Supervision was given to cleaning seed used for increased production of pedigreed seed and all seed used on College farm.

WEED CONTROL

The year 1961 saw major accomplishments in weed control in Ontario. Over 3/4 million acres of crops were sprayed, the largest acreage ever reported.

This involved the widest range of crops and more extensive used of the newer herbicides. No major disappointments occured in the performance of these chemicals.

About an average cost per acre for 2,4-D on cereals is fifty cents. Only a few years ago this chemical was the only one of significance in field crop spraying. While 2,4-D still retains leadership in point of acreage, it is interesting that nearly 200,000 acres have been sprayed with much more costly chemicals, costing from three dollars to fifteen dollars per acre for field crops and up to thirty dollars for some vegetables.

Roadside spraying was more extensive in 1961. Encouraging in this regard is the minimum reported crop damage.

ADMINISTRATION OF THE WEED CONTROL ACT

Approximately 1000 individual orders to destroy weeds were issued. Co-operation from property owners and tenants was good. A few court cases resulted, with decisions favouring the Weed Administration. In addition to the order, many acres of suburban and urban property, usually in small lots, were treated for weed control by municipal authorities. Authority for this is given in Section 13 of the Act. Under this section a notice in local newspapers requiring that the weeds be destoyed before a certain date is sufficient in subdivided portions of a municipality and for lots not exceeding nine acres. After the date named, the municipality may take the necessary action to have the weeds destroyed.

The most obvious lag in weed control is in the ragweed infested areas of suburbs and unused farmlands surrounding suburbs. Railway rights-of-way are the next greatest offenders. Following this are unimproved pastures infested with thistles, milkweek and wild carrot. These problems rate high in the program for 1962.

Table 1
Crop Acreages Spraved, 1961

Area	Cereals	Corn	Pastures	Vegetables	Misc.	Total
s.w.	83,300	238,255	21,650	6,000	6,600*	355,805
Niagara	37,622	13,235	8,138	4,644	-	63,639
Western	145,000	22,500	11,300	400	200	179,400
Central	54,804	14,165	3,512	855	2,538**	75,874
Eastern	79,890	7,535	4,235	950	2,125	94,735
Total	400,616	295,690	48,835	12,849	11,463	769,453

^{*} Includes 5600 acres soybeans, 2500 sprayed pre-emergent, and 1000 acres white beans sprayed pre-emergent

** Includes 1400 acres tobacco, pre-emergent

Comparisons by Years	Acres Sprayed		
1961	769,453		
1960	585,116		
1959	640,967		

1958	391,831
1957	359,878
1956	298,000

A substantial quantity of herbicides was also used in Northern Ontario, but acreage records are not available.

Of the more than 3/4 million acres of crops sprayed in 1961, almost half are in the five counties of Southwestern Ontario. Large increases in this area occured in cereals, corn, pastures and vegetables. Soybeans also showed substantial increases in herbicide treatments. It would appear that weed spraying is becoming an accepted practice in the production of cash crops, as well as in feed grains and pastures.

Table II

Roadside - Mileages Sprayed and Mowed in Ontario, 1961

		Sprayed	Mowed
S	Southwestern Ontario	6,116	6,773
I	Niagara	4,830	6,979
7	Western Ontario	6,965	7,250
(Central Ontario	6,141	6,254
1	Eastern Ontario	4,394	5,278
	Total	28,446	32,534

Preliminary estimates of the Ontario Department of Highways indicate a sprayed roadside mileage on provincial highways in excess of 6,000 miles. This would give a total of 34,446 miles of roadsides sprayed in 1961, compared with 26,425 in 1960.

Also noted is a reduction by some 2,000 miles in the roadside areas mowed. It should be explained that the figure for mowing represents the combined mowings during the season; e.g., ten miles of road mowed three times is reported as thirty miles. A spray program reduces the requirements for second and third mowings and effects operating economies.

BARBERRY AND BUCKTHORN

The barberry and buckthorn control work is being accelerated, with fourteen counties expected to participate in the fifty-per-cent subsidy offered. Additional counties are starting on a demonstration basis, or using other funds for this work.

Basal bark treatment with brushkiller is used, and approximately 635 gallons of brushkiller will be used in this way in 1962. In addition, ground treatments with Atlacide and sodium chlorate are still being used. New materials used in 1961 include Dybor, Urab and Urox. The maximum subsidy to a county in any one year is six hundred dollars.

LEAFY SPURGE

Assistance in eradication of leafy spurge is on the same basis as buckthorn, with a maximum per county of \$250.00 for chemicals per year.

Infestations of spurge are limited but are known to occur to some degree in

eight counties. Control programs are under way using such chemicals as D Bor, brushkiller and 2.4-D. Eradication of spurge is a high cost operation by any means yet discovered, and the assistance program is intended to prevent further spread and eventual elimination of this weed.

FINANCIAL ASSISTANCE

The branch pays fifty per cent of salary and expenses of county weed inspectors.

FOUNDATION SEED COMMITTEE

Two meetings were held to approve distribution, also two field meetings. The following was made available to selected growers:

winter wheat - Genesee - 5 1/2 bushels - 5 growers oats - Russell - 5 1/2 bushels - 11 growers - Rodney - 3 bushels - 3 growers - Garry - 2 bushels - 2 growers barley - Herta - 1 bushel - 1 grower - keystone - 1 bushel - 1 grower beans - Sanilac - 3 bushels - 3 growers Soybeans - Harosoy - distribution not completed.

CANADIAN FORAGE SEED PROJECT

The branch was represented on a Federal-Provincial committee to allocate available supplies of foundation and breeder's seed. Arrangements were made to distribute the following:

Climax	time	othy	- Breeder's	Seed -	390	lbs.	60	per	lb.
		-	Foundation	Seed -	6,960	lbs.	45	per	lb.
Lasall	Red	Clover	- Breeder's	Seed -	250	lbs.	\$3.00	per	1b.
		_	Foundation	Seed -	1858	lbs.	\$1.00	per	1b.
Ottawa	Red	Clover	- Breeder's	Seed -	100	lbs.	\$2.00	per	lb.

POTATOES

Some 64,000 acres were grown in 1961, with an average estimated yield of 314 bushels per acre and a total farm value of \$22,507,500.00. This is 3,000 acres more, 22 bushels more per acre, and \$3,320,000. less than the previous year.

Imports were 7,020 carloads, a decrease from previous year of 3,193. These originated, and compared with 1960, as follows: P.E.I. - 3,319 (4,645); New Brunswick - 2,159 (3,712); U.S.A. - 1,474 (1,729); Manitoba - 59 (89); Quebec - 9 (9). Complete records are not available from Manitoba due to truck movement.

During the year there was a trend towards shipment of cars from the Maritimes, due to establishment of a more favourable agreed rate.

Exports were 136 carloads, including 82 to Newfoundland; 25 to Nova Scotia and 13 to U.S.A. In 1960, exports were 104 carloads, with 44 to Newfoundland.

Potato production in Ontario is undergoing rapid change. In total, the number of growers and shippers is declining. Those remaining have larger volume of output, and they are more receptive than their predecessors to the need for specialized marketing. Involved in the change are more storage and packing facilities, improved varieties, more care in the use of fertilizers, large yields, higher dry matter, and better grade and pack. Add to this the evolution in the field of processing, and one has an entirely different picture from a few years ago. A

steady increased output of potato chips, both in quantities used and number of plants, now requires a tremendous volume. Further, there is a growing demand for prepelled, instant mashed potato flakes, dehydrated slices, au gratin, convenient escalloped, salad, frozen french fries, puffs, etc.

The early crop was two weeks later than usual. Price structure was broken early, due to imported supplies of poor quality. The main crop yielded an abun-

dance of high quality potatoes.

Prices remained considerably above normal from Port Arthur west, due to a short crop in Western Canada. A "value for duty" was applied last August to restrict imports at distress prices. Throughout the remainder of the Province prices were below average, due largely to a lower price level over the continent, particularly in concentrated potato producing areas of the U.S.

Personnel of the branch co-operated with other Departmental officials to promote and move the 1961 potato crop in Ontario through a planned progam of public relations. All in all, it was a very good year for potato producers. Even though prices were low, new outlets were obtained, and new demands were created, which may continue and expand.

At the 1961 Canadian National Exhibition a 32-foot exhibit on potatoes attracted wide attention. The following is a summary of some opinions expressed:

(1) Most people prefer to use Ontario potatoes for the full year. They enquire the reason that the Ontario product is not available.

(2) Full confidence in grade, higher standards and variety name on package are important. Quality of Marsh product is not always satisfactory.

(3) More people are using instant mashed potato flakes and other convenient forms with satisfaction.

(4) Price is not usually a factor. More people cut down on potato consumption due to quality than any other factor.

(5) The old fallacy that potatoes are fattening is being gradually overcome. Most people like potatoes.

During the year the study and report of the Agricultural Enquiry Committee pointed out that the greatest need is for storage and concentration of supplies.

Co-operation was given in 4-H Club work, regional variety testing, fairs, demonstrations and Canadian Potato Indusry Conference.

After a series of tests, the "Hunter" variety was licensed as seed on September 11, 1961. The Hunter is mid-season-to-late in maturity, resistant to Black Leg and some other diseases. It is a high yielder, producing uniform, attractive tubers with high dry matter and excellent cooking quality.

The service of providing inspection of commercial potato fields was continued. A staff of nineteen was appointed on a temporary per diem basis. Incidence of the disease was the lowest on record since the first survey in 1943. A trace or small percentage was found on 50 farms, as compared to 673 in 1946, with losses severe in many cases at that time. There was excellent co-operation in following through regulations.

TURNIPS

A most favourable growing season, coupled with improved production practices, resulted in one of the largest turnip crops on record. Although demands showed improvement, prices were below normal. The Turnip Committee, O.S.C.I.A., was active during the year in a large number of projects from seed supplies to marketing. A voluntary levy on containers brought in over five thousand dollars to be used for advertising and promotion.

FEED GRAIN PROMOTION

1961 was a poor crop year in the Prairie Provinces. It is now estimated that the total 1961 production and carry-over of oats in Canada is close to 60 million bushels short of estimated needs. Ten years ago Canada exported to the United States an average of 50 million bushels oats. In 1961 more than three million bushels were imported from the United States.

The Ontario importation of U.S. corn was doubled in 1961. Oat prices were eight to ten dollars a ton higher, and the livestock population was up five to seven per cent.

COST OF PRODUCTION

Ontario studies indicate that as yields of oats increase from 42 bushels to 62 bushels and then to 78 bushels, the cost of production goes from \$48.00 per ton to \$34.00 per ton and to \$30.00 per ton respectively. A similar situation applies to barley and corn.

The price of oats imported from the West is in excess of \$50.00 per ton. There is now considerable incentive to Ontario farmers to grow a larger percentage of our feed requirements.

Under conditions of good climate, drainage, fertility, and weed control, the following comparison shows relative productivity of alternative crops:

	Yield per Acre Bushels	Pounds of Total Digest- ible Nutrients per Acre
Oats	75	1785
Barley	60	2246
Corn	100	4480

This table indicates that extra pounds of feed units can be produced by changing some of the oat acreage to barley where barley is known to do well; or if the soil and climate are right for grain corn the total units of feed nutrients per acre may be doubled.

It is apparent that in 1962 it will be economically sound for Ontario farmers to step up feed grain production by as much as twenty per cent. The method of producing the increase is very flexible, depending on individual farm conditions. The factors involved are: extra acres where feasible, high yielding varieties, use of crops likely to produce the largest tonnage of feed units per acre, a studied fertility program, and the removal of weed competition.

Even if the 1962 Western crop proves to be normal there will be no surplus of Canadian grown oats, barley or corn. A stepped up production program will provide insurance against the possibility of further advancing prices for feed grains.

With these facts in mind, a promotion program was undertaken by the Department of an increase of at least twenty per cent in production of feed grain for 1962.

Information Branch

The program of the Information Branch is designed to provide:

- (1) Information of value to producers and consumers of Ontario farm products.
- (2) Information of value to extension personnel of the Department.
- (3) Instruction in communication skills to extension personnel in conjunction with the program of the Department of Extension Education, Ontario Agricultural College.

The Information Branch uses all media in carrying out its program including news releases, radio recordings, television films, daily and weekly press and farm publications.

NEWS RELEASES

Two weekly news release services, "Farm News" and "Consumer News" provide useful farm and consumer information to the editors of Ontario weekly and daily newspapers and to farm directors of Ontario radio and television stations.

During the year 203 farm news stories and 208 consumer news stories were provided through these services to nearly 900 editors, writers and agricultural specialists.

TELEVISION

The Branch continued to provide television stations with material for their farm programs.

PUBLICATIONS

During the year 82 extension publications with a total of 815,000 copies were edited and published in addition to 7 annual reports with a total distribution of 15,800 copies.

DISTRIBUTION

The distribution of publications and the answering of requests for information, is the responsibility of the Publications office of the Branch.

More than 25,000 individual requests for farming, gardening and homemaking information were filled during the year. These requests were divided as follows,-

 Number of individual letters
 17,007

 Telephone requests
 4,804

 Calls at office
 3,644

 25,455

Junior Farmer Loan Branch

The main responsibility of this branch continues to be the administration of loans made to Junior Farmers between the year 1952 and 1960. The work consists of collections, accounting, sales and transfers, also the approval of easements. partial discharges, oil and gas leases. A considerable amount of legal work is involved. Records providing evidence that all farm buildings are adequately insured against fire is another duty. In addition to the office staff, fifteen experienced fieldmen are employed on a per diem basis in connection with collections. and a certain amount of supervision. Under this plan, a first visit is made two to three years after the loan was completed. At this time a careful check is made of the complete farm operation, and advice is given if needed. This visit also provides an opportunity to make a check on the maintenance of the security and the progress of the borrower. Where conditions are found to be satisfactory, it is not the practice to plan subsequent visits except in an emergency, such as fire loss or in connection with requests for partial discharges etc. Where it is found that the borrower is not making good progress or where the value of the security is depreciating, the fieldman is asked to return once a year or oftener. In the fiscal year just ended, 887 supervisory calls were made.

For the fiscal year ending March the 31st, 1962, repayment of principal amounted to \$2,025,158.00, an increase over the previous year. There was also an increase in the number of loans paid off in full for a total of 167. Only one farm was repossessed and sold under Sales Proceedings, and no loss was involved. Of the 3846 loans granted in the amount of \$28,557,459.00, there remained 3131 on March the 31st, 1962, represented by outstanding principal of \$20,008,066.00. Collections, which continue to be an important part of the work, show a slight improvement over the previous year. At the end of March, payments in arrears amounted to only 2.17%.

It is rather interesting to note that, although the Junior Farmer Loan Act of 1952 provided for 25 year loans with interest at 4-1/2% or 20 year loan at 4%, only 28 borrowers availed themselves of the 25 year term at 4-1/2%. Another interesting observation is that of the large number of borrowers with perfect payment records there is a suprising number whose original prospects appeared very doubtful. In fact some of this number were only approved following two or three inspections and considerable discussion. It is likewise noteworthy that some of the borrowers with the brightest prospects when the loan was made subsequently failures. A variety of reasons can be offered for both groups but experience has shown that the moral risk is most often the deciding factor between success and failure in farm loans, when other conditions are comparable.

Markets Development Branch

Established in 1961, the markets Development Branch was designed to develop markets across Canada and overseas and to encourage producer marketing boards and industry to develop existing outlets and to find new outlets for Ontario food products. Agricultural marketing development programs are becoming increasingly essential for an industry whose growth in capacity to produce has outstripped the growth in profitable markets. The need for market development will increase in the future and of necessity will be directly related to farm output, population growth and rates of consumption of agricultural products, especially those in abundant supply. As a result, merchandising, advertising and other forms of promotion and development will be the principal approaches in market development in order to create awareness and to inform the buying public how they may use and benefit from the consumption of the promoted product. During its first year, detailed consideration was given to the broad program of the new Branch in the light of the staff and budget available and the particular type of product promotion most necessary. In addition, the following were the highlights of the program conducted during the year.

ONTARIO AGRICULTURAL TRADE PROMOTER:

The Report of the Ontario Government Agricultural Trade Mission which visited the United Kingdom and Europe during September-October, 1960, to inquire into the possibilities of increased export trade in Ontario agricultural products was studied in order to implement as quickly as possible its main recommendations. The chief one was acted on during the year by the appointment to the United Kingdom and European market of an Ontario Agricultural Trade Promoter attached to the Branch.

This officer will be based at Toronto for the time being but will go abroad as occasion warrants. His duties are to explore current and long-term market opportunities, become familiar with market preferences and the measure of competition from other countries, to discuss actual market requirements and to stimulate the interest of prospective purchasers in Ontario farm and food products exported. Ontario products have been out of the United Kingdom market for over twenty years. It will take some time to re-educate importers and the trade there on the special values of the farm and food products this Province has to offer. It will take still more time and effort to persuade Ontario producers to cater again to the requirements of the export market. Only by having overseas representation constantly surveying this field and regularly reporting on conditions can this essential combined effort be achieved.

THE ONTARIO TENDER FRUIT INSTITUTE:

The establishment of the Ontario Tender Fruit Institute, comprised of equal representation from the Ontario Tender Fruit Growers' Marketing Board and the Ontario Food Processors' Association with the Chairman from the Branch, was completed during the year. Purpose of the Institute is to promote the wider distribution and increased sales of Ontario canned fruit. Previously this work had been carried out by the fruit grower and fruit processor groups independently. With the program now consolidated, it is 75 per cent directed at the domestic market through the press, radio and television media and with the use of coloured film and 25 per cent at the export market through participation in United Kingdom trade exhibitions and food fairs.

The Institute's budget, now exceeding \$65,000 yearly, is provided by the fruit growers and fruit canners each contributing 50 cents per ton on the quantity of

fresh peaches, pears, plums and sweet cherries processed annually. The Ontario Department of Agriculture contributes on the same tonnage basis but to a maximum of \$15,000 per year.

THE ONTARIO POTATO MARKETING POLICY COMMITTEE:

The Ontario Potato Marketing Policy Committee, comprised of representatives of the potato growers and packers with the Chairman from the Branch, was established during the year. Purpose of the Committee is to develop a provincial potato storage warehouse and marketing program. The Committee has met several times and is making definite progress toward its objectives.

THE ONTARIO FARM PRODUCTS CONTAINERS ACT:

The Director of the Branch is the Inspector of the Ontario Farm Products Containers Act under the authority of which a licence fee of one per cent of the net selling price of all wooden, paper and plastic containers manufacture and sold for use to market fresh fruits and vegetables produced in Ontario is levied. The funds collected by this means, which totalled \$30,177.09 during the year, are remitted to the Ontario Fruit and Vegetable Growers' Association to cover its expenses in promoting the wider distribution and increased sales of Ontario fresh fruits and vegetables. The total fees received to-date by the Association since the levy was imposed total \$435,475.93.

THE COMMITTEE ON VERTICAL INTEGRATION:

The Director of the Branch was appointed Secretary of the Ministerial Committee on Vertical Integration in the fruit and vegetable processing industry during the year. This fact-finding Committee was comprised of members of the fruit and vegetable growing and processing industries and of the two official farm organizations of the Province. The Committee proceeded by inviting written submissions on the extent of the problem of vertical integration in given areas, the reasons favouring and not favouring vertical integration and suggestions for improving the industry. The research staff of the Farm Economics and Statistics Branch of the Department aided the Committee substantially in outlining and interpreting the available information and in appraising the situation.

After studying the several briefs submitted by various members, the Committee agreed on the following recommendations since they were common to all the presentations:

- 1. There should be no restrictive legislation imposed on the fruit and vegetable processing industry at this time to prevent production and processing by the same person or agency. This principle to apply equally both ways; i. e. to producers who may enter the processing field or to processors who may enter the producing field.
- 2. All producers of fruit and vegetable processing crops (growers and processors) should be similarly treated; i.e.
 - (a) All should contribute alike to the maintenance of the producer marketing boards through payment of the prescribed producer fees or service charges established under the law, and if necessary the Farm Products Marketing Act should be amended to make this principle mandatory.
 - (b) Producers should be established to deal with alleged discrimination or failure to live up to the terms of any grower-processor agreement or contract.

Consideration should be given to the question of judiciary powers being granted to the Farm Products Marketing Board to deal with these matters

in lieu of their being handled by Joint Committees or producers and processors.

In order to make certain the Committee's recommendations could be implemented, the Committee concurred in recommending three amendments to be made to the Farm Products Marketing Act as follows:

- A proposal, adopted from the Milk Industry Act, to authorize the Farm Products Marketing Board to deal with individul cases of alleged discrimination chiefly concerning cancellation of contract or refusing to purchase a regulated product by a processor from a producer without just cause.
- 2. A proposal to authorize the Farm Products Marketing Board to make regulations requiring all producers to pay licence fees and to furnish statements of accounts to the Board or to a local board regardless of whether a processor is also a producer.
- 3. A proposal to give the Farm Products Marketing Board supervisory power over contracts between processors and producers and to control infractions of any regulations found in any contract which are not in accord with the provisions of any marketing agreement.

In due course the Committee's recommendations were approved and the Farm Products Marketing Act was amended during the session of the Legislature then sitting.

In concluding its first series of discussions, the Committee recommended that an interim report be prepared of the material received, reviewing the factors why land leasing had developed to its present extent by processors for producing fruit and vegetable crops, and on approval by the Committee the report to be submitted to The Honourable The Minister of Agriculture.

THE FARM PRODUCTS MARKETING ACT:

During the year the Branch was requested to undertake several incidental activities related to a number of proposed producer marketing plans under the Farm Products Marketing Act. In particular, these included addressing several meetings of interested commodity producer groups in connection with the proposed onion grower's marketing plan, the proposed grain corn marketing plan and the proposed over-all milk marketing plan.

THE ONTARIO FOOD TERMINAL ACT:

The Director of the Branch is Chairman of the Ontario Food Terminal Board administering Toronto's modern wholesale fruit and produce terminal market under the authority of the Ontario Food Terminal Act. The facilities provided include two produce warehouse buildings, a Farmers' and Truckers' Market, office space, cold storage plant, railway facilities, public car and truck parking facilities, all contained within a fifty acre market site.

The Ontario Livestock Branch

Acts and policies of the Live Stock Branch deal with two distinctive phases, administrative and educational. The administrative function of the Branch consists in the main of enforcing and supervising all Provincial Acts and Regulations thereof in respect to live stock or where live stock might be involved. Educational assistance policies are those dealing with the promotion of better livestock and are designed to encourage improvement in type, performance, quality and health. The essence of live stock policies is that of assisting producers to make a profit, and at the same time give encouragement to those in the business.

During the past year, Ontario continued to be the largest livestock producing Province. Income from livestock and livestock products still accounts for nearly 70% of the total gross farm receipts.

Ontario enjoys a large export trade in Dairy Cattle to the U.S.A. and other South American countries. The quality of stock produced in this province is such that a ready market is available. Shipments are made regularly to the Caribbean area and Mexico. Shipments of hogs took place throughout the year. Sheep exports, while still small, have been made. Sales of dressed pork to the U.S.A. have continued on an increased volume.

Every effort has been made to have Ontario completely certified as a Brucellosis free area in order to retain our reputation for healthy stock. Programs have been developed for more swine health work under the plan for Specific Pathogen Free herds. In general a strong effort has been made to offer assistance in the control of disease. Farmers suffering losses as a result of Rabies have received indemnity payments which is now covered under a definite policy.

ARTIFICIAL INSEMINATION ACT

For the past fifteen years Artificial Insemination has increased steadily until at the present time practically every area is serviced either directly or indirectly by one or other of the licensed units.

Legislation designed to control the operations of units was placed on the statutes in 1947 and periodically revised with the last revision having been made in 1960.

Under this Act and regulations are prescribed standards for qualification of technicians, form of licences, powers and duty of the Board, as well as the requirements for A.I. Centres. Assistance in the form of grants for the purchase of bulls, and in providing service in Northern Ontario was paid under authority of the regulations.

All licensed units are eligible for grants to assist in the purchase of bulls on the basis of 20% of the purchase price up to a maximum of \$600.00. In the districts of Northern Ontario where the distances are great, and artificial insemination more costly, the Live Stock Branch pays a subsidy at the rate of \$2.00 per cow inseminated. This assistance makes possible the operation of Artificial Insemination Centres in remote areas.

During the year 1961, licences were issued to 14 A.I. Centres, and to 283 technicians. Of the 14 centres operating, 8 are located in Old Ontario, the remainder in Northern Ontario. Arrangements are made between the various operating units in Southern Ontario for the distribution of semen to centres where certain breeds of bulls are not kept. This mutual assistance policy now makes available the use of bulls of almost any breed in any area in the Province. This so called centralized service also makes possible the retention of enough bulls of

certain breeds in order to supply the demand without all units having to purchase sires of the same breed. It will be noted that for the first time in the history of Ontario the total number of cows inseminated has reached an all time high of 502,707.

The following shows the number of cows inseminated by the various centres in 1961.

	# Cows	# Cows	Increase or
Name of Centre	inseminated 1961	inseminated 1960	Decrease
Oxford & District C.B. Ass'n.	127,570	117,709	- 9861
Central Ontario C.B. Ass'n.	111,384	101,583	+ 9701
Waterloo C.B. Ass'n.	82,350	78,962	+ 7448
Eastern Ontario C.B. Ass'n.	66,608	63,848	+ 2760
Hamilton District C.B. Ass'n.	43,648	42,533	+ 1115
Quinte District C.B. Ass'n.	44,422	41,582	+ 2840
Lambton C.B. Ass'n.	13,737	10,661	+ 3076
Essex C.B. Ass'n.	7,880	8,235	- 355
Rainy River C.B. Ass'n.	2,136	2,031	+ 105
Temiskaming C.B. Ass'n.	1,852	1,656	+ 196
Cochrance C.B. Ass'n.	693	682	+ 11
Algoma C.B. Ass'n.	137	143	- 6
Dryden C.B. Ass'n.	25 6	231	+ 25
Porcupine C.B. Ass'n.	241	325	- 84
	502,914	470,181	16,971

N.B. Ontario centres sold semen to other distributing centres in both Eastern and Western provinces in which over 80,000 cows were bred artificially. The number of cows bred to bulls of the various breeds follows:

	# Cows	# Cows	Increase or
Breed	inseminated 1961	inseminated 1960	Decrease
Ayrshire	10,48	10,194	+ 286
Guernsey	12,613	11,319	+ 1294
Holstein	296,882	277,151	+ 19731
Jersey	26,925	24,781	+ 2144
D. P. Shorthorn	8,340	8,742	- 402
Red Poll	317	362	- 45
Angus	13,171	10,880	+ 2291
Hereford	99,906	92,377	+ 7529
Shorthorn	22,287	22,648	- 361
Charolais	6,263	7,428	- 1165
Brown Swiss	369	_	+ 369
Unspecified	5,154	4,299	+ 855
	502,707	470,181	32526

During the year a total of \$26,858.27 was paid to centres to aid in the purchase of bulls, and \$30,924.00 was paid to centres in Northern Ontario under authority of the regulation which provides for grants to assist in the cost of providing the service in that area.

STALLION ENROLMENT ACT

As can be expected this Act, while still effective, applies to a greatly reduced number of horses as compared to twenty years ago. All stallions of the Clydesdale, Percheron, Belgian, German Coach, Suffolk and Canadian breeds are required to be enrolled. Each stallion must be inspected and approved before being eligible for enrolment, and must meet the minimum standard for approval as laid down by the Stallion Enrolment Board, namely, three grades A, B or C.

The number of stallions enrolled showed an increase from 161 in 1960 to 191 in 1961. Of this number 74 were Percherons, 67 Belgians, 35 Clydesdale, 12 Canadian, 3 German Coach and 1 Suffolk.

Owners of grade A and B stallions are eligible for premiums of \$3.00 and \$2.00 respectively for each mare left with foal. In 1961-62 total payments under this Policy were \$9331.00, of which \$8439.00 was paid to the owners of 96 grade A stallions and \$892.00 to the owners of 23 grade B stallions. The Canada Department of Agriculture co-operates in this policy by duplicating any premium payments made by the province.

LIVESTOCK COMMUNITY SALES ACT

On July 1st, 1959, the Livestock Community Sales Act came into force. This Act deals specifically with Community Sales. Under its provisions Community Sales are classified into two categories: Class I and Class II. Classification is based on volume of business. In Class I sales have a weekly turnover of \$75,000 or less. Class II have an average weekly turnover in excess of \$75,000. The annual licence fees are as follows: Class I - \$200. and Class II - \$400. Operators of Class I Sales are bonded for \$10,000; the operators of Class II Sales for \$20,000. The purpose of the bond is to give livestock consignors protection, in the event of an operator being in default in making payment for livestock consigned to the Sale. Operators are also required to insure livestock accepted for Sale at Community Sales against loss or damage by fire. Registered veterinarians in the employ of the Ontario Livestock Branch must inspect all livestock delivered to Community Sales. Private practitioners have been appointed to carry out these assignments. Only livestock that, in the opinion of the veterinarian is free from disease may be offered for sale back to the country. On the other hand, livestock of marketable age that shows evidence of a disease which will not affect its usefulness for meat (e.g. mastitis) may be sold for slaughter.

In 1961, sixty-seven Community Sales were licensed in Ontario, and increase of five over 1960.

Figures compiled from weekly reports submitted by the veterinarians indicate that the Community Sale has become a popular livestock market.

Class of Livestock

No. Head Sold, 1961

Class of Livestock	No. Head Sold, 1961	
Steers for slaughter Heifers Cows Bulls	77.125 67,536 85,419 12,246	
Total slaughter cattle		242,326
Cows sold back to the country Heifers Stockers or feeders Bulls	30,801 50,904 110,634 843	

Total cattle sold back to the country	7	193,182
Veal calves Bob calves (3-10 days old)	177,483 109,452	286,935
Weanling pigs Feeder pigs Sows Stags & Boars Market hogs	543,873 445,428 39,629 15,661 9,645	1,054,236
Horses	8,226	8,226
Sheep & Lambs	39,112	39,112
		1.824.017

THE BRUCELLOSIS ACT

The Brucellosis Act deals with the vaccination of calves as a Brucellosis control measure. The vaccine is supplied by the Canada Department of Agriculture. The Ontario Department of Agriculture is charged with the complete administration and cost involved in providing the cattle owners with the vaccination service. This Act requires that cattle owners have their female calves vaccinated between the ages of four through ten months by a registered veterinarian of their own choice.

Calfhood vaccination, besides being a recognized Brucellosis Control measure, is also important economically in the domestic market, and even more so in the export market, since many States in the U.S.A. demand as an import requirement that all cattle for breeding purposes be vaccinated.

In the year 1956, when the Brucellosis Act came into force, 304,299 calves were vaccinated, while the number vaccinated in the year 1961 was 416,028 at a total cost of \$515,650.32. Since the inception of the Act, 480 veterinarians have received appointments to conduct calfhood vaccinations.

Owners of calves which die from Anaphylactic Shock subsequent to vaccination are compensated for the loss. Compensation is based on \$100 maximum for pure breds and \$50 maximum for grades. During 1961, fifty-five calves died and the Department paid \$3,700.00 compensation to owners. The number of deaths from this cause has remained relatively constant, being approximately one death in every 7,800 calves vaccinated.

BRUCELLOSIS CONTROL AND CERTIFIED AREAS

In 1957, the Canada Department of Agriculture initiated a program in an effort to eradicate Brucellosis. During 1958, Livestock Branch personnel, in co-operation with Agricultural Representatives, attended numerous meetings for the purpose of acquainting cattle owners with the program. When blood testing commenced, area were designated Brucellosis Control areas, and, when it is found that the percentage of cattle infected does not exceed one per cent of the total cattle population in the area, and the percentage of herds infected does not exceed five per cent of the herds in the area, the area may be Certified for a period of three years.

At the end of the fiscal year, thirty-seven counties had been certified and testing is almost complete in four other counties. Also, the test is well advanced in three of the territorial districts.

Calfhood Vaccination has proved very effective in reducing the incidence and controlling the spread of Brucellosis. If a Province-wide compulsory vaccination program had not been a fore-runner of the test and slaughter policy of the Canada

Department of Agriculture, it is logical to assume that the over all cost of eradicating the disease would have been much greater.

WARBLE FLY CONTROL ACT

During the past year 259 townships operated under the Act, and according to inspectors' reports 907,362 cattle were treated in April and 731,499 cattle were treated in May. In townships where the necessary by-law has been passed it is required that all cattle in which warble fly grubs have been found must be treated according to the regulations. Each township must appoint an inspector or inspectors as the case may be for the purpose of enforcing this Act. Assistance to townships is made available on 50% of the cost of the powder and 50 per cent of the salary and travelling expenses of the inspectors.

The total amount paid in the form of grants to townships was \$75,023.98. Of the original by-laws passed by townships only 3 have been repealed. These were in the main located in areas where border townships were not treating animals. Evidence that this work has met with favour is shown by added interest in areas previously not treating for warble fly.

Experimental work on other insecticides has been carried on during the past year as a means of determining the practicalibility of the use of such products. Favourable results were obtained.

DEAD ANIMAL DISPOSAL ACT

This Act came into force on July 1st, 1960, being the first legislation in Canada designed to control this type of business. Under the Act, all persons engaged in the business of collecting and/or processing dead or fallen animals must be licensed, and are classed as follows:

- (1) Collector
- means a person engaged in the business of collecting dead animals and fallen animals.
- (2) Receiving Plant Operator
- is a person who operates a plant which is a premises to which dead animals are delivered for the purpose of obtaining the hide, skin, fats, meator other product of the dead animals.
- (3) Rendering Plant Operator
- is a person who operates a plant which is a premises at which dead animals are processed into hides, meat, bone meal, meat meal or inedible fats.

At the outset, inspections revealed that a great number of unsatisfactory structural and unsanitary conditions existed in plants and vehicles used by some persons engaged in this business. Accordingly, the majority of plant operators were required to improve their plants and premises in order to comply with the Regulations. With respect to Collectors, all vehicles being used in the collection of dead animals required alteration. A number of persons engaged in the business prior to the passage of the Act chose to cease operations when informed that they must conduct their business in accordance with the Act and Regulations.

The Ontario Provincial Police have assisted the inspectors of the Branch in enforcing the Dead Animal Disposal Act. Through their co-operation, four persons who contravened the Act and Regulations have been charged and convicted.

During the year, nineteen persons were charged by the R.C.M.P. with offences under the Food & Drugs Act, Statutes of Canada, for selling meat from dead and diseased animals for human consumption. The outcome of some of these charges

is still pending. Five of the persons who were charged were holders of licences under the Dead Animal Disposal Act. The licences of these five operators have not been renewed for the year 1962.

In 1961, the number of licences issued under the Act was as follows:

Rendering Plants 6
Receiving Plants 50
Collectors 79

THE DOG TAX AND CATTLE, SHEEP AND POULTRY PROTECTION ACT

Under this Act every municipality is required to tax dog owners at rates equal to or above those specified therein. In addition, the municipality is obligated to reimburse owners for losses sustained to cattle, sheep or poultry as a result of attacks by dogs. The value of the loss is determined by a township valuer, of whom one or more must be appointed in each municipality. If, by chance, either the municipal council or the owner of the livestock is dissatisfied with the award of the local valuer, the dissatisfied party has the right to appeal to the Livestock Commissioner, who in turn must appoint a valuer to investigate the case, and whose valuation shall be final and conclusive.

While a great many losses are sustained annually as a result of attacks by dogs, most cases are settled at the municipal level. However 2 appeals were re-

ceived by the Livestock Commissioner in 1961.

DAIRY HERD IMPROVEMENT ASSOCIATIONS

This program could well be known as a multi-purpose policy which embraces two separate phases. One is that of providing a recognized system of milk recording for owners of grade or mixed herds, and secondly providing members with information about their own herds in regard to production.

The second purpose of D.H.I.A. is that of using available data for proving the performance records of sires in A.I. Units since 80% of D.H.I.A. members use A.I. The basis of appraisal gives a proper comparison of unit daughters against daughters of other bulls in the same herds. Information in this particular field is beneficial not only to D.H.I.A. members, but to every member of an A.I. unit, and since 70% of our largest pure bred breeds are sired by unit bulls this program is very worthwhile.

In 1960, a change was made in the Dairy Herd Improvement Policy whereby all members who owned over 80% pure breds were given the opportunity of going on the Combined Plan for a year, after which they were asked to either continue on R.O.P. or drop out. At the same time all herds whose three year average was less than 80% of their own association average were asked to discontinue membership, some 200 herds were thus moved off D.H.I.A. Replacements were found in almost every case, excepting in one county where it was impossible to find a sufficient number of breeders who had enough grade animals in order to comply with the regulations. This club was therefore disbanded. The report of D.H.I.A. indicates a slight reduction over that of the previous year. This can be attributed to the fact that of the 200 members who were dropped many were high producing herds, and as a consequence new members taken on had the effect of reducing the total production figures.

During the year one extra association was formed taking the place of one which had been disbanded the year previous.

It has been noted from the records over the last year that more attention is being paid by members to their operations both in breeding, feeding and to their cost work.

The Weight-a-Day-a-Month plan is still in effect as a means of obtaining individual production figures. These are potential new dairy herd members. Following is a summary of the D.H.I.A. program for the year 1961:

Number of associations	59
Number of herds enrolled	1293
Number of cows in these herds	32766
Average number of cows per herd	25
Number of certificates issued during the year	26430
Number of cows qualifying for gold or red seal certificates	19990
Percentage of cows qualifying	75.7
Average milk production per cow	9716
Average fat production per cow	353
Average butter fat test	3.64

Requirements for qualification

Class	For Red Seal Certificate	For Gold Seal Certificate
2 year old	220 lbs. butter fat	330 lbs. butter fat
3 " "	260 " " "	390 " " "
4 " "	300 " " "	450 " " "
Mature	350 " " "	525 " " "

ADVANCED REGISTRY POLICY FOR BEEF CATTLE

This policy is designed to obtain information about the performance of young beef bulls that appear destined to become future herd sires. Under the policy, bulls are started on a feed-gain test when between 7-1/2 and 8-1/2 months of age. The test covers a minimum period of 140 days, during which time the bulls are on full feed, thus are given ample opportunity of indicating their ability to gain.

Test may be conducted at one of the three stations which are located at Ridgetown, Guelph and Kemptville, or on the premises of the owners. When tests are made at a Station, records of feed consumption are maintained. The results indicate that there is a high correlations between rate and economy of gain. Thus it can be assumed that in most cases, the bulls which made the fastest gains make the cheapest gains.

During the year 840 bulls, representing four breeds and owned by 236 breeders completed tests. A summary of results follows:

	Station Tests	Home Tests
No. bulls completing tests:	124	716
Av. Weaning Weight (adj. 205 days)	502 pounds	514 pounds
Av. Starting Weight	573 "	580 "
Av. Total Gain on Test	351 "	371 "
Av. Daily Gain	2.51 "	2.60 "

Av. Final Weight	924 "	950 "	
Av. Yearling Weight	877 "	900 "	
Av. Weight Per Day of Age	2.40 "	2.46 "	

In addition to the testing of young bulls, a Herd Test plan was initiated whereby any person engaged in the breeding of a breed of beef cattle which is eligible for registration under the Canadian National Livestock Records may participate.

Under this plan, a breeder owning 10 or more females of breeding age, may enroll the herd and the end of the testing year a herd report will be issued to each participating herd owner showing pertinent data respecting the breeding and performance of each calf completing the test during the year.

To date 17 herds have been enrolled under the Herd Test Plan.

Also, during the year, 6 breeders have joined Performance Registry International.

BULL PREMIUM POLICY

In an effort to encourage a wider distribution of good beef bulls premiums are payable to persons who purchase perfomance tested bulls at the Ontario bull sale or at consignment sales held under the auspices of Breeders' Clubs.

- (a) "performance tested bull" means a bull of a beef breed that
 - (i) has been approved from the standpoint of type,
 - (ii) has been tested under the Advanced Registry Policy for Beef Cattle,
 - (iii) has a record under that Policy of an average daily gain on test of 2.40 pounds, and
 - (iv) has a weight per day of age, when out of a dam whose age at time of birth of the bull was
 - 1. less than 3 years, 2.30 pounds,
 - 2. at least 3 years but less than 4 years, 2.35 pounds
 - 3. at least 4 years but less than 10 years, 2.40 pounds,
 - 4. at least 10 years but less than 15 years, 2.35 pounds,
 - 5. at least 15 years, 2.30 pounds.

During the year premiums totalling \$33,012.23 were paid to the purchasers of 378 perfomance tested bulls.

ONTARIO BULL SALE

The Ontario bull sale, managed under the direction of the Livestock Commissioner, offers to the beef cattle breeders of Ontario the largest number of performance tested bulls in Canada. Only those bulls qualifying under the designation of "performance tested" are eligible for the bull premium policy. However, this does not prohibit non-tested bulls from being eligible for entry at this sale. Well over 60% of the bulls offered at this sale were those which qualified as "performance tested". All entries are rigidly inspected and culled before being offered for sale, and only those passing these requirements are presented for auction. Any animals culled are taken home by the consignor.

A summary of the 1961 sale follows:

	20 20220 110.		
	Angus	Shorthorns	Herefords
# bulls entered	11	58	123
# bulls withdrawn	0	5	9
# bulls culled	3	12	14
# bulls sold	8	41	100
Av. price	\$479.38	\$ 497.68	\$ 545.70

Top price	\$575.00	\$1200.00	\$1100.00
Av. Top price	\$518.00	\$ 831.00	\$ 940.00

CONSIGNMENT SALES

Breeders' Clubs that have been approved by the Minister are eligible for grants to assist in defraying the expenses of operating consignment sales. In order to qualify, the sponsoring organization must restrict entries to animals which have been inspected and approved by an inspector named by the Livestock Commissioner, and which conform to high health standards. The grants are as follows:

- (1) To cattle breeders' associations -\$5.00 per animal sold, up to a maximum of \$200.
- (2) To swine breeders' associations -\$2.50 per head, up to a maximum of \$100.
- (3) To sheep breeders' associations -\$1.00 per head sold, or the sale expenses, whichever is the lesser amount.

CATTLE SALES

Breed	# Sales	# Animals So	ld Total Grants Paid
Holstein	14	507	\$ 2230.00
Ayrshire	6	235	1010.00
Guernsey	11	429	1955.00
Jersey	1	30	150.00
Shorthorn	10	221	1105.00
Hereford	9	216	1080.00
Angus	4	194	1030.00
Combined breed sales	3	72	360.00
	58	1904	8920.00

As will be noted above, the Livestock Branch provides assistance to breed associations holding cattle sales during the year, in the form of a grant of \$5.00 per animal sold up to a maximum of \$200. In the case of beef breed sales, an inspection service is supplied by the Ontario Livestock Branch for the purpose of choosing entries on the basis of type and individuality. The majority of the beef breed sales are as is to be expected mostly male animals, and since the Ontario Bull Premium Policy applies to beef breeds, it is necessary to have these bulls approved before being offered for sale at auction.

SWINE SALES

In an effort to assist the breeders of pure bred swine of the province, grants are being made available to assist in distributing high class pure bred breeding stock.

The following is a complete report of the number of swine sales held during the year.

	No. Head Sold	Av. Price	Grant
Haldimand District Pure Bred Beef & Swine	8	\$ 102.25	\$ 20.00
Zone 2 Yorkshire Clubs	42	144.58	100.00

Zone 4 Yorkshire Club	35	148.28	87.50
Lacombe Swine Breeders Assoc.	35	186.92	87.50
Waterloo A.R. Yorkshire	-	-	~
Stratford District Yorkshire Club	32	112.58	80.00
Grey County A.R. Yorkshire	22	129.20	55.00
Ontario Landrace	40	103.55	100.00
Wellington A.R. Yorkshire	32	104.92	80.00
Ontario Swine Breeders' Association	51	126.17	100.00
Elgin-Middlesex Yorkshire	26	76.57	65.00
South-Western Ontario Yorkshire	35	171.35	87.50

It also must be understood that in the case of a club holding a sale that the grant applies only on one sale per year. The report of sales is that on which the Ontario Livestock Branch paid grants. Most clubs hold more than one sale per year which do not appear in this report.

SHEEP SALES

At sheep breeders' association sales held in various parts of the province, the Ontario Ram Premium Policy applies, and it is only at sales of this kind where this can be obtained. The following are the sales held:

	No. Head Sold	Av. Price	Grant
Ontario Sheep Breeders' Association	29	68.62	29.00
Grey-Bruce Sheep Breeders' Association	76	38.20	76.00
Ottawa Valley Sheep Breeders' Association	55	38.38	55.00

REGIONAL SHOWS

Interest has been maintained rather strongly in the effort of breed associations working in conjunction with local sponsoring Agricultural Societies featuring regional sheep shows. As has been intimated, animals are allowed only from a restricted region or zone. Prize money as a general rule is paid out in equal amounts. In practically every case where a sheep show was held in the province last year, the total amount of the provincial grant was used, and exhibits were well up to, and in some cases well above, that of previous years. Such grants were as follows:

Cattle

Breed	# Shows	# Entries	# Animals Shown	Total Grants
Holstein	43	5703	4655	\$ 3858.40
Ayrshire	19	1493	1208	1534.60
Jersey	21	1944	1571	1550.09
Guernsey	14	1174	962	1165.70
Shorthorn	8	746	603	756.60
Hereford	7	571	419	600.00

Angus	5	411	319	437.80
D. P. Shorthorn	1	69	54	85.20
Red Poll	1	45	43	47.80
				10036.19
Swine				
Yorkshire	7	533	410	604.00
Berkshire	1	45	36	58.75
Tamworth	1	75	60	100.00
Landrace	1	30	25	51.25
Sheep	5	1193	1017	500.00

HORSE SHOWS

Horse show associations are eligible for grants on the basis of 50 per cent of the prize money paid out, but not more than \$300., except at larger shows, in which case the grant may be increased to \$500. provided the county makes a grant in an equal amount. Grants paid in 1961 were as follows:

Brooklin Spring Horse Show	\$300.00
Toronto Horse Show	300.00
Uxbridge Horse Show	300.00
Elgin Horse Breeders' Association	235.60
Middlesex Heavy Horse Show	100,00
St. Catharines Riding & Driving Club	500.00
North Blenheim Horse Show	300.00
Lynden District Horse Show	300.00
Essex County Horse Show	150.00

BOAR PREMIUM POLICY

To qualify for the designation "approved boar" a boar must be out of a sow with performance record of 75 or more, approved from the standpoint of type and conformation, and out of a herd that shows no visible evidence of atrophic rhinitis or other infectious diseases. Inspections of the boars and of the herds in which they originate are made by members of the staff of the Livestock Branch. Persons buying approved boars are eligible for premiums in accordance with the following schedule:

Record of Parents	Amount of Grant
Dam scoring 84 or more, sire qualified	\$ 35.00
Dam scoring 84 or more, sire not qualified	30.00
Dam scoring 75-83, sire qualified	30.00
Dam scoring 75-83, sire not qualified	25.00

During the year 1961-62 premiums totalling \$23,575.00 were paid to the purchasers of 758 approved boars.

RAM PREMIUM POLICY

Persons who purchase rams which have been approved from the standpoint of type and conformation at sales held under the sponsorship of Breeders' Clubs are eligible for grants at the rate of 20% of the purchase price but not exceeding \$25.00. In 1961-62 premiums totalling \$759.00 were paid to the purchasers of 70 rams.

RAM LOANING POLICY

When the Federal-Provincial freight assistance policy was inaugurated in 1961 whereby both departments paid on a 50-50 basis, two-thirds of the total freight, the Ontario Livestock Branch initiated a ram loaning policy to all purchasers of Western range ewes kept for breeding purposes. Rams were loaned on the basis of one ram for every 40 ewes, but in no case did any purchaser receive a total of more than 4 rams. One hundred and eleven rams were placed under this policy, and are on loan for a period of two years. Over 5000 breeding ewes were moved from Western Canada to Ontario under freight assistance. Approximately 50 new flocks were established under this policy.

Under the Sheep Freight Assistance Policy the Department paid \$7,108.53. Under the ram loaning policy the cost was \$5,297.00, plus delivery charges of \$140.24.

CERTIFIED HERD POLICY FOR SWINE

This Policy was introduced in May of 1960 for the purpose of assisting the breeders of pure bred swine in establishing herds that are free from virus pneumonia and infectious atrophic rhinitis, and of giving official recognition to breeders who have achieved this objective. These diseases which are prevalent in Ontario herds cause serious economic losses to the swine industry. In the case of both diseases, there is no practical test available, there is no effective immunizing agent, and no effective means of treatment. Although clinical symptions are readily detected in certain herds affected with one or both of these diseases, these diseases may exist in other herds in a form which is not easily recognized. Consequently, it is not possible to rely only on visual inspection as a means of diagnosis. However, a diagnosis can be made on the basis of clinical information obtained from regular inspections, combined with the results of post mortem examinations conducted on heads and lungs from at least one-third of the natural increase in a herd over a period of one year. Atrophic rhinitis produces lesions in the lungs.

When this Policy was conceived, it was assumed that there were pure bred herds existing in the Province which were free of these diseases. However, the findings to date would suggest that this assumption may not be correct. Of 40 herds (exclusive of S.P.F. herds) enrolled under the Policy, all but one have been found to be infected with one or both diseases, with the remaining one still in doubt.

Because of these disappointing results, more attention has been focussed on the establishment of Specific Pathogen Free (S.P.F.) herds. S.P.F. pigs are those that have normal microbiological flora present, but do not have certain specified harmful pathogens. The primary S.P.F. pigs are obtained by surgery. Operations are performed at, or shortly before, the time the sow is due to farrow. The little pigs are removed from the uterus under aseptic conditions; thus they are free of

any virus or bacteria carried by the sow. They are kept in incubators under aseptic conditions for one week, and then transferred to special brooders. at four to five weeks of age, the pigs are taken from the laboratory to a farm that has been free of swine for at least six weeks. The equipment and facilities one the farm must be cleaned and disinfected prior to the pigs' arrival.

There are fifteen S.P.F. herds enrolled under the Certified Herd Policy. These herds receive supervision under the Policy, that is: clinical examinations are made at six-week intervals, and for a period of one year following enrolment, post mortem examinations are conducted on the heads and lungs of at least one-third of the pigs in each litter upon reaching market weight.

FREIGHT ASSISTANCE

Northern Ontario, - An effort to assist farmers residing in Northern Ontario has been made in accordance with a prescribed schedule for freight assistance when livestock is purchased in Old Ontario and in North-Western Ontario from the Western provinces, for the purpose of supplementing or improving their herds. Quite a definite trend during the past year has been indicated in the movement of dairy cattle to certain sections of Northern Ontario. The custom of Northern Ontario farmers is to make purchases in the south in an effort to maintain their milk quota for the various urban centre. Freight assistance in this case serves 2 purposes: - One, making available to farmers in the north, good animals. The other makes for the southern farmer an available market.

District to which		
livestock shipped	# Head	Amount Paid
Algoma	339	\$ 2643.54
Cochrane	63	1157.05
Manitoulin	33	361.73
Muskoka	43	333.71
Nipissing	375	3770.00
Parry Sound	60	535.91
Rainy River	81	1051.74
Sudbury	. 90	1003.50
Temiskaming	61	543.86
Thunder Bay	113	1686.60
Kenora	62	718.12
	1320	
The total amount paid in freigh	nt assistance was	\$13805.76

FOREIGN EXHIBITIONS

Freight assistance is available to Ontario Breeders' Clubs that undertake to sponsor exhibits at major exhibitions in United States. All animals comprising the exhibit are carefully selected by members appointed for the purpose. In 1961, Ontario Holsteins and Jerseys were exhibited at Chicago and won a major share of the awards. Advertising such as this on behalf of the breeders in the province is very much appreciated by the breedassociations and by the breeders themselves.

SUBSIDIZED VETERINARY UNITS

Subsidized Veterinary Units were introduced in the Territorial Districts to encourage veterinarians to establish practices so that livestock owners within a prescribed area would be able to obtain veterinary service. To finance such units, the Livestock Branch matches grants made by subscribing municipalities, up to a maximum of \$1,800. Therefore, the veterinarian may receive a subsidy of \$3,600. A committee is formed of persons within the contributing area to assist in the administration of the Unit. The veterinarian agrees to perform the service throughout the area at a call fee established by negotiation.

There are fourteen (14) Veterinary Units in the Territorial Districts. Another Unit was established in Old Ontario in 1961. This unit is comprised of the south-western townships of Renfrew County, and the northern townships of Lennox-Addington and Hastings. Two of the Units are without veterinarians, and efforts are being made to secure personnel for these areas.

Total amount paid in grants during 1961 was \$21,868,19.

Ontario Telephone Service Commission

The Ontario Telephone Service Commission is responsible for the administration of The Telephone Act (R.S.O. 1960, Chapter 394). The Chairman of the Commission is also Director of the Telephone Branch of the Department of Agriculture which acts as staff of the Commission and provides engineering and commercial assistance to independent telephone systems within the jurisdiction of Ontario.

The Chairman and Vice-Chairman are permanent employees of the Department and there are three members who are actively engaged in the telephone business in different parts of the province.

In 1961 the Commission met each month in its Toronto office to hear applications made under provisions of The Telephone Act. One hearing was held at Forest on a boundary dispute between the People's Telephone Company of Forest, Limited and Hurontario Telephones Limited, and another at Shedden on a boundary dispute between the Wallacetown and Lakeshore Telephone Association Limited and the Southwold and Dunwich Telephone Association Limited. The Commission, at its meetings in the Toronto Office, also received deputations representing Independent Telephone Associations, telephone systems, Municipal Councils and telephone customers. Joint meetings were held with officials of the Bell Telephone Company, Hydro-Electric Power Commission of Ontario, Members of Parliament and others seeking advice and assistance in telephone matters. Members of the Commission and staff also attended local meetings of Telephone Associations, Municipal Councils and telephone systems to give advice and assistance in improving telephone service in rural areas.

During the year ending December 31, 1961, a total of 140 Orders were issued by the Commission as follows:

For approval of municipal by-laws granting franchises	3
For approval of distribution of assets of municipal systems	5
For approval of telephone charges 1	9
For approval of Special Resolutions and Company By-laws	5
For approval of agreements for interchange of service	23
For approval of municipal systems' by-laws	3
For approval of sale of system or portion of system 4	14
For Order prescribing date of annual meeting of subscribers	9
For authority to issue evidence of indebtedness	.7
For authority to use depreciation fund moneys for construction	1
For authority to maintain parellel lines and establish boundaries	5
For release of subscribers and establishing boundaries	2
Orders to amend existing Orders	2
Orders cancelled and application withdrawn	2
14	0

THE TELEPHONE ENGINEERING AND COMMERCIAL BRANCH

The work of the Branch is divided between the Engineering Division, which consists of two Professional Engineers, four Engineer's Assistants and a Clerk-Stenographer, and the Commercial Division, which consists of one Executive Officer, one Accountant and a Clerk-Stenographer.

Engineering assistance provided by the Branch has been responsible for improved service being provided by many independent systems and, in a number of cases, complete systems have been rebuilt in accordance with plans prepared by

the Engineering Division. Progress in modernization of independents continued during 1961 mainly in the form of conversion to dial operation and re-building of outside plant facilities. In this regard, there has been a noticeable decline in openwire construction; more plastic cable and multiple line wire is being installed with resultant greater protection against storm damage and reduced maintenance. A further trend is the use of buried exchange plant in both rural and urban areas. As a result of the development of associated materials, apparatus and methods of construction, buried cable distribution plant is becoming competitive in cost with aerial plant in many situations. However, with the introduction of cable plant, cables are becoming longer and larger partly because more pairs are required due to increased telephone development and partly because upgrading of service increases the ratio of lines to telephones.

These changes result in a greater investment in outside plant which in turn, necessitates a search for ways to construct plant at less cost in order to hold capital expenditures for outside plant and those for central offices in good balance. The introduction of these techniques requires and increasingly high proportion of Engineer's Assistants' time being devoted both to preparation of detailed plant design and on site instruction and supervision.

During the past year some of the major activities of the Engineering Division were as follows:

Item	Number
 Dial Central Offices engineered and cut into service. Manual Central Offices engineered and cut into service. Systems for which detailed plans were engineered and provided. Systems which received assistance in re-arranging telephone plant 	1
as required for road construction. 5. Systems to which general technical assistance was rendered 6. Systems for which fundamental planning was undertaken and is	7 14
continuing	21 195

The Commercial Division is prepared to assist telephone systems with general business and accounting advice. The staff is qualified to instruct systems in improved bookkeeping methods and assist them to establish new systems of records. The time of one man is devoted almost exclusively to this phase of the work and excellent results have been achieved.

A large portion of the work of the Commercial Division consists of answering queries received both by mail and in person from the various systems, concerning proper procedures to follow when they wish to take action under the provisions of The Telephone Act, The Corporations Act, and The Municipal Act.

Under The Telephone Act, a telephone system must apply to the Commission for an Order of approval before a by-law, schedule of rates, or certain aspects of the physical or financial set-up of the system can legally be changed. The Commercial Division prepares the information on which the Commission bases its decision as to whether or not the action should be approved.

In the case of an application for an Order approving the sale of a system, or a part thereof, an investigation must be made to determine that a future merger or other desirable development will not be prejudiced. The studies of various merger possibilities require cost figures and revenue forecasts and the Commercial and Engineering Divisions combine in providing this information.

In the Case of an application for an increase in rates, a study must be made both to determine that the rates are reasonable, from the standpoint of the telephone users, and that they are adequate for the needs of the system concerned. In some cases, proposed rates have not been approved in the first instance because they were too low, and the system has been shown that it must have a certain revenue in order to provide proper service and that a more realistic rate schedule should be established.

The Commercial Division also collects and checks the "Telephone Statistics" reporting form on which all systems make an annual return to the Dominion Bureau of Statistics and to this Commission. These returns are used extensively in analysing the problems of individual systems as well as in preparation of the annual report of the Ontario Telephone Service Commission which is widely used by the telephone systems themselves, equipment suppliers and others interested in the telephone industry.

SUMMARY OF STATISTICS

Complete returns for the calendar year 1961 are not available at the date of publication of this Report but detailed statistics on individual systems will be contained in the Report of the Ontario Telephone Service Commission - 1961, which will be published later in the year.

As at January 1, 1961, there were 270 independent telephone systems within the jurisdiction of Ontario operating approximately 175,500 telephones. During 1961, 39 independent systems, operating 8,700 telephones, ceased to operate or were sold to other telephone systems, and one new system was formed. At January 1, 1962, there were therefore, 232 remainding independent systems reporting. It is assumed that natural growth of the remaining systems will result in the total number of operated telephones remaining almost the same despite the fact that most of the sales were made outside the independent field.

SALES

The following 27 systems gave up business during 1961, and, in most cases, their areas will now be served by the Bell Telephone Company of Canada. Normally, completely new facilities are installed and when these are in operation, old plant is removed and the independent systems goes out of business.

	No. of
Name	Address Phones
Artemesia Municipal Telephone System	. Markdale 36
Beaver Valley Municipal Telephone System	Thornbury 402
Bechwith and Montague Telephone Co. Ltd	Franktown 60
Black Lake Telephone Co. Ltd	. Perth 11
Bobcaygeon Rural Telephone Co. Ltd	. Bobcaygeon 134
Brighton Municipal Telephone System	. Brighton571
Christie Municipal Telephone System	Orrville 31
East Woodville Telephone Co. Ltd	. Woodville 29
Eldon Union Telephone Co. Ltd	. Woodville 99
Euphrasia Municipal Telephone System	. Markdale 135
Ferry Road Telephone Co. Ltd	. Perth 112
Hungerford Municipal Telephone System	. Tweed 27

Manse Grove Telephone Co. Ltd	
Montreal (Ont.) Telephone Co. Ltd	
Morley Municipal Telephone System	
Mount Forest, Wellington & Grey Telephone Co. Ltd	Mount Forest348
Point Mara Telephone Co. Ltd	Brechin 26
Prescott Rural Telephone Co. Ltd	Fournier 90
Railton Rural Telephone Line	Sydenham 2
Scotch Line & Stanleyville Telephone Co. Ltd	Perth 97
South Plantagenet Rural Telephone Co. Ltd	Riceville150
Spence and Monteith Telephone Co. Ltd	Orrville 6
Verona and Frontenac Telephone Co. Ltd	Verona 159
Udney Telephone Co. Ltd	Brechin109
Wolford Rural Telephone Co. Ltd	. Easton's Corners . 104
Woodville Glen Telephone Co. Ltd	Woodville 36

Twelve additional systems were sold to larger telephone companies and their operations will be integrated with those of the new owners:

Name	Address	No. of Phones	Sold To
Adroch Rural Telephone System	Fernleigh	56	Kaladar & Northern Telephone Co. Ltd.
Caledon Municipal Telephone System	Caledon	646	Bell Telephone Co.
Coldsprings Rural Telephone Co. Ltd	Coldsprings	400	Bell Telephone Co.
Cumberland Telephone System	Navan	578	Metcalfe Rural Telephone Co. Ltd.
Davis Telephone Co. Ltd.	Eganville	1527	Bell Telephone Co.
East Luther Telephone System	Grand Valley	667	Bell Telephone Co.
Falkirk Telephone Co. Ltd.	Kerwood	499	Erin Community Telephone Co. Ltd.
Iron Bridge Telephone Co. Ltd.	Iron Bridge	171	Bell Telephone Co.
Kerr Line Telephone Co. Ltd.	Forester's Falls	104	Bell Telephone Co.
Lake St. Joseph Telephone Co. Ltd.	Central Patricia	57	Northern Telephone Ltd.
Riverdale Rural Telephone Assn. Tilbury West Municipal Telephone	Napanee	21	Bell Telephone Co.
System	Comber	843	Bell Telephone Co.

Four Orders were issued during the year to approve change of ownership. The systems concerned will, however, continue to operate as separate entities and under the same name.

- (1) A controlling interest in the Metcalfe Rural Telephone Company Limited was purchased by Messrs. G.J. McIlraith and C.W. Johnson. The system operates approximately 800 phones from an exchange at Metcalfe, Ontario.
- (2) Mr. Robert R. Sproule, owner of the Plevna Telephone System, which operates approximately 50 telephones from an exchange at Plevna, sold the system to his brother Mr. Garnet G. Sproule.

- (3) Mr. Charles H. Gunter, Owner of the Wollaston Rural Telephone System, which operates approximately 125 phones from an exchange at Coe Hill, Ontario, sold the system to Mr. Charles S. Collett.
- (4) Community Telephone Company Limited of Dunnville, Ontario, purchased a controlling interest in the Yarker Rural Telephone Company Limited, which operates approximately 135 phones from an exchange at Yarker.

Three sales of a portion of a system were completed during the year.

- (1) The Dunsford Telephone, Light and Power Co-operative Association Limited turned over to the Bell Telephone Company that portion of its territory which was being served from Bell's Bobcaygeon Exchange. Approximately 65 telephones are affected and these will now operate on a dial basis from the newly converted Bobcaygeon Exchange.
- (2) The Morrow Telephone Company Limited sold that portion of its territory in the Plevna area and its exchange at Plevena to Mr. Robert R. Sproule who operated the 50 telephones involved in the sale under the name of the "Plevna Telephone System" and later sold the system to his brother Garnet G. Sproule as mentioned above.
- (3) The Stroud Telephone Company Limited, which has arranged for the sale of its entire system to the Bell Telephone Company, turned over a portion, involving approximately 90 phones in the Paineswick area, in late 1961. The balance of the system will be taken over in 1963 when a new exchange in Barrie has been completed.

In addition to the above completed transactions, arrangements have been made for the sale or overbuild during 1962-1963 of an additional 33 systems operating approximately 4,500 telephones. Each case has been studied individually by the Commission and an Order has been issued approving the action.

Preliminary negotiations are underway for the sale or overbuild of 21 further systems although final approval has not yet been issued by the Commission. In many cases, however, the Commission has been called upon to make a study of the situation and assist the system concerned to determine the best course of action. These 21 systems operate approximately 4,600 telephones and it is anticipated that the sale or overbuild of most of them will be completed within the next five years.

ORGANIZATION OF SYSTEMS

The independent telephone systems in Ontario may be divided into four Classes according to type of ownership. The 232 systems operating at the beginning of 1962 are organized as shown in the following table which also shows the number of telephones in each of the groups as of January 1, 1961.

	Systems		Telephones	
Type of Ownership	No.	%	No.	%
Systems operated as Public Utilities by Municipal Corporations	9	4.0	45,805	27.5
Municipal Systems	58	25.0	35,086	21.0

Systems owned by Incorporated Telephone Companies	149	64.0	83,311	50.0
Systems owned by individuals or Partnerships	16	7.0	2,452	1.5
	232	100.0	166,654	100.00

SIZE OF SYSTEMS

The relative size of the independent systems is also of interest. Due to a trend of the times, many small systems are finding it economically impossible to continue to operate and are either selling out or vacating the area and making arrangements for another system to provide service. In the early days of the telephone industry, many groups of farmers, realizing the value of the telephone to them in conducting their business, organized telephone systems in their own communities, rather than wait until one of the larger companies could serve them. Good telephone service is today of even greater value and may be considered almost essential in the marketing of farm produce, yet it is from the rural areas that most complaints are received. Telephone service throughout rural Ontario is, however, continually improving. The sale of smaller systems to their larger neighbours generally results in more efficient operation and there is no doubt that most of the remaining independents, with the encouragement and assistance of the Ontario Telephone Service Commission, are making considerable progress in the modernization of their equipment and methods.

The following table indicates the size of systems operating in Ontario as of January 1, 1962, and also shows the split between Connecting Companies and Service Station Systems. "Connecting Companies" are those which operate a complete telephone plant including switchboards, while "Service Station Systems" provide only the telephone and line facilities which connect their subscribers with another company's switchboard and they must pay a switching charge for such connection.

No. of Telephones Operated	Connecting Companies			Service Station Systems		Total	
	No.	%	No.	%	No.	%	
1-10	1	.7	9	9.0	9	4.0	
11-25	1	.7	39	43.5	40	17.0	
26-50	7	5.0	21	23.5	28	12.0	
51-100	7	5.0	12	13.0	19	8.0	
101-300	41	29.0	5	5.5	46	20.0	
301-600	36	25.6	5	5.5	41	18.0	
601-1000	23	16.0		_	23	10.0	
1001-2000	16	11.0	_	_	16	7.0	
2001-5000	7	5.0	_	_	7	3.0	
5001-Over	3	2.0	_	_	3	1.0	
	142	100.0	90	100.0	232	100.0	

It will be noted from the above table that more than 40 per cent of the systems operate less than 100 stations each and over 60 per cent have less than 300. Since the average system of less than 300 telephones cannot justify or affort a full-time employee to construct and maintain the plant, and still less, pay for management which is experienced in the telephone business, it is obvious that at least this

60 per cent of the total systems are operated not as a business but as something secondary to the principal occupations of the people concerned. Only 26 systems own more than 1,000 telephones which number might be considered the minimum for efficient operation.

Provincial Apiarist

A total of 44,177 colonies of bees were inspected by Ontario Apiary Inspectors during 1961, in 3,171 apiaries. Amercian Foulbrood was found in 223 apiaries, or 7.06 per cent of those inspected. These diseased apiaries contained 702, or 1.5 per cent, infected colonies.

In 1961, 2,731 beekeepers registered 5,315 apiaries and 120,865 colonies. During the year approximately 76 disease samples were diagnosed. Two hundred and twelve (212) permits were issued for selling and moving colonies and equipment. Fifty-seven (57) permits were issued for moving 3,065 colonies for pollination of orchard and greenhouse (cucumber) crops.

The Ontario honey crop for 1961 was 8,400,000 pounds, and average of 70 pounds per colony.

INSPECTION AND REGISTRATION OF COLONIES OF BEES

COUNTY	INSPECTION				REGISTRATIO		
	APIARIES		COLO	NIES			
	Inspected	Diseased	Inspected	Diseased	APIARIES	COLONIE	
Algoma	12	_	231	_	12	248	
Brant	93	17	1,257	78	76	1,182	
Bruce	168	-	70	-	155	4,044	
Carleton	117	18	1,714	48	154	4,624	
Cochrane	21	-	275	-	13	147	
Dufferin	33	-	347	-	63	1,837	
Dundas	40	3	948	5	58	1,494	
Durham	83	9	928	25	86	1,369	
Elgin	80	2	972	2	171	1,404	
Essex	103	23	1,295	55	206	1,798	
Frontenac	10	~	143	_	49	084	
Glengarry	47	7	952	27	70	2,392	
Grenville	19	3	526	5	46	1,067	
Grey	32	3	443	3	232	7,495	
Haldimand	46	3	686	11	150	3,335	
Haliburton	10	_	40	_	16	65	
Halton	-	_	_	_	111	3,073	
Hastings	104	6	1,914	9	200	3,325	
Huron	80	4	1,248	9	174	5,044	
Kenora	4	-	22	_	3	11	
Kent	92	6	834	8	108	1,214	
Lambton	39	2	405	3	228	5,791	
Lanark	31	_	360	_	98	3,802	
Leeds	86	3	1,581	3	78	2,248	
Lennox-Addington	5	1	68	1	69	2,385	
Lincoln	149	18	1,105	45	193	2,836	
Manitoulin	9	_	60	_	10	81	
Middlesex	97	12	1,958	27	140	5,674	
Muskoka	11	1	90	1	8	4.4	
Nipissing	3	_	32	_	6	44 35	
Norfolk	67	4	771	52	75		
Northumberland	84	8	1,140	19	121	891 2,8 93	

PERCENTAGE		7.	06	1	.5	
TOTALS	3,171	223	44,177	702	5,315	120.865
York	131	17	1,630	62	229	4,526
Wentworth	106	~	1,031	12	150	2,069
Wellington	103	3	1,622	12	117	3,094
Welland	65	8	523	25	149	1,633
Waterloo	106	3	1,360	9	111	1,991
Victoria	66	-	543	-	90	1,880
Timiskaming	18	-	612	3	54	1,522
Thunder Bay	14	-	62	-	13	45
Sudbury	-	-	_	-	4	4
Stormont	52	3	1,352	12	66	1,788
Simcoe	181	6	3,173	16	287	8,015
Russell	35	_	484	-	34	740
Renfrew	54	1	832	2	116	3,622
Rainy River	19	400	591	10	28	825
Prince Edward	70	17	1,142	57	54	1,278
Prescott	55	2	1,320	17	46	2,201
Peterboro	30	_	484	-	94	1,830
Perth	44	_	1,101	1	101	2,737
Peel	19	1	355	1	131	3,407
Parry Sound	12	_	100	_	22	279
Patricia	_	_	_		1	2
Oxford	113	1	1,473	2	93	1,881
Ontario	103	8	1,972	25	146	2,664

Provincial Entomologist

The duties of the Provincial Entomologist in relation to the Plant Diseases Act were carried out in co-operation with the Farm Products Inspection Service of the Ontario Markets Branch and the Plant Protection Division of the Canada Department of Agriculture. All other work was conducted at the Department of Zoology, Ontario Agricultural College, Guelph.

Liaison in control recommendations for insects and mites attacking agricultural crops was maintained with the Canada Department of Agriculture. Many extension outlines and press releases were prepared. The Face fly on cattle continued to be an important problem. The cluster fly in some suburban and rural homes was extremely plentiful, a pest for which no very satisfactory control is known. A few growers encountered complete loss of their carrot and parsnip crops from a strain of the carrot rust fly that has developed resistance to control by the chlorinated hydro-carbons.

A contamination problem on asparagus occured in the spring of 1961 from the pigweed casebearer. Some work was initiated to devise cultural practices to control this insect.

Trapping for the Japanese beetle continued in co-operation with the Plant Protection Division of the Canada Department of Agriculture. An infestation larger than in 1960 was found in several areas. As a result, the following areas were treated with 10% dieldrin granular at 30 pounds per acre: Hamilton 137 acres, Niagara Falls 90 acres, St. Catharines 30 acres, and Leamington 23 acres.

REGULATORY DUTIES

The Provincial Entomologist was in charge of certain "Plant Diseases" under the Plant Diseases Act.

Nursery Inspection

A total of 356 licences to operate a nursery or to be a dealer in nursery stock was issued in 1961 under the Regulations. Co-operation with the inspection of the Canada Plant Protection Division was continued as in 1960 with stock infested with diseases under the Plant Diseases Act being reported to the Ontario inspectors. Infested material was removed.

Apple Maggot

Three hundred and forty eight (348) orchards were inspected in the fall of 1961 concerning apple maggot. Apple maggot was found in only 38% of these orchards and in many of these only in unimportant varieties. This inspection concerns qualifications for shipment of apples to countries such as the United Kingdom and Europe. The 1961 crop was one of the largest and highest quality ever harvested in Ontario.

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FOR THE YEAR ENDING MARCH 31, 1963

Annual Court



PROVINCE OF ONTARIO

EPORT OF THE MINISTER OF AGRICULTURE



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EPORT OF THE MINISTER OF AGRIGULTURE



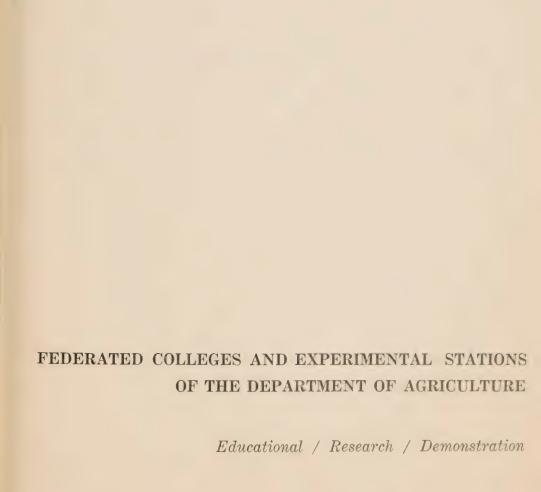
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REPORT OF THE MINISTER OF AGRICULTURE

FOR THE YEAR ENDING, MARCH 31, 1963 PROVINCE OF ONTARIO







DEPARTMENT OF AGRICULTURE PROVINCE OF ONTARIO

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To the Honourable Lt.-Col. John Keiller Mackay, D.S.O.

Lieut.-Governor of Ontario.

MAY IT PLEASE YOUR HONOUR:

I have the honour to submit the Report of the Department of Agriculture for the year ending March 31, 1963.

I have the honour to be, sir.

Your obedient servant,

WM. A. STEWART,

Minister of Agriculture.

Toronto, March 31, 1963.



The Ontario Veterinary College

The Ontario Agricultural College

and Macdonald Institute

Federation of the Ontario Veterinary College, the Ontario Agricultural College, and Macdonald Institute — through Bill 49, an Act respecting these Colleges — was proclaimed by the Lieutenant Governor for the Province of Ontario on June 14. 1962. Concurrently, the Agricultural Research Institute of Ontario, which involves the Federated Colleges, was established through Bill 50. This report contains extracts and summaries of the annual report for the Federated Colleges and that portion of the report of the Agricultural Research Institute dealing with the Federated Colleges.

Federation of the Colleges and Their Relationship to The Agricultural Research Institute

The following include some pertinent events and motivations which have led to federation of the Colleges and to their participation in the work of the Research Institute.

Research developments

Significant changes have occurred, particularly during the past decade, in not only the human and physical resources of the Colleges but in the character of endeavour. Educational requirements to meet the needs of a changing society have been a contributing factor to these changes, but public demand for research on agricultural problems and for services related thereto have had the major influence upon program adjustment.

Through much of their history the Colleges maintained their reputations primarily in education and through participation in extension services. Awareness of the need for greater research activity, both in scope and intensity, became apparent during and following the Second World War, but participation has experienced great momentum particularly during the last decade. Research and allied services at the Ontario Agricultural College and the Ontario Veterinary College now absorb more of the operational budget and occupy more faculty time than does education. Although Macdonald Institute remains primarily an educational college, there is a growing interest in research activity.

The emphasis now being given to research and allied services is illustrated by the following assessments. The Woods-Gordon analysis made in 1960 indicated net operational expenditures of the previous fiscal year for research and allied services at 71.5 per cent for the Ontario Agricultural College, 59.3 per cent for the Ontario Veterinary College, and 9.7 per cent for Macdonald Institute; the remaining percentages for each College were attached to educational costs. The 1963-64 gross operational estimates for the three Colleges and central administration indicate that approximately 60 per cent will be directed to research and allied services, 40 per cent to education. Distribution of faculty effort on a time basis also reflects the extent of participation in research and allied services as related to education. During the summer months of the 1962-63 fiscal year, research and allied services absorbed 80 per cent of total faculty time at the Ontario Agricultural College and 65 per cent at the Ontario Veterinary College; during the academic session activity in this area of work accounted for more than 30 per cent of O.A.C. faculty time and approximately 50 per cent of O.V.C. faculty time.

Though the Agricultural Research Institute involves research units under the Ontario Department of Agriculture, this organization was motivated by the extent and degree of research activity on the Guelph campus. Its establishment provided a means to set forth operational costs for this work in relation to those for education, and the arrangements are such that the administration and faculty of the Colleges participate in the structure and development of the program for the Research Institute, at the same time retaining full responsibility for the utilization of the annual grants to the Colleges.

Educational developments

The growth in research activity has not occurred at the expense of educational endeavour; indeed the former has enhanced the latter. The demands for research have called for upgrading of faculty academic qualifications (the vast majority now have advantage degrees, with more than 100 at the Ph.D. level), and the recently acquired physical facilities have been designed to meet the needs of both research and education. Needless to say, active participation in expanding the boundaries of knowledge is a stimulating adjunct to the dissemination of knowledge.

Within the past decade the total undergraduate student body of the three colleges has doubled. During this interim, major adjustments have occurred in the academic programs, motivated by attempts to better meet the educational needs of graduates and also to further the integration of educational effort. Within recent years the course program leading to the B.S.A. at the Ontario Agricultural College has been consolidated with due regard to the place of science and incorporating a wider variety of courses in the humanities and social sciences. The D.V.M. degree course of the Ontario Veterinary College was extended to a five-year program in 1949; the first year of this course has been made similar to that of the B.S.A. degree course. The educational program of Macdonald Institute had been limited to Home Economics at the diploma level until 1948, when the degree course leading to the B.H.Sc. was introduced; approximately 50 per cent of the course for the B.H.Sc. are given by the Ontario Agricultural College. Two hundred and fifty students were registered for the B.H.Sc. degree in the 1962-63 session and, for the first time, limitations on physical facilities at Macdonald Institute prevented the acceptance of all fully qualified students. Until this year the limiting to 40 students in the oneyear Diploma Course in Home Economics had allowed all qualified degree students to enroll. Because opportunities for this diploma type of training are available through various agencies elsewhere in Ontario, the consensus is that, even with additional facilities, Macdonald Institute can make a more worthy contribution to society through utilization of resources for the degree course and for developments in research. The diploma course in Home Economics is therefore being discon-

By arrangement with the University of Toronto, graduate study leading to the M.S.A. degree was initiated at the Ontario Agricultural College in 1926. More than one hundred students from many parts of the world are now annually registered for this degree. The Ontario Agricultural College unfortunately continues to be the only university Faculty of Agriculture in Canada not providing graduate work at the Ph.D. level, an anomaly which obtains in spite of the research environment that has been created and in spite of the fact that for several years the National Research Council has been awarding postdoctorate fellowships for study at this College.

The Ontario Veterinary College provides graduate study leading to the M.V.Sc. degree and is also responsible for the D.V.Sc. degree, which is in recognition of proficiency in original investigation and calls for a thesis that constitutes a significant contribution of scientfic knowledge. The resources of this College are also fully adequate for graduate work at the Ph.D. level.

No graduate degree in Household Science is available to Macdonald Institute at the present time. It is sincerely hoped that research development will warrant the participation of Macdonald Institute in graduate work within the near future.

Deep concern has been experienced over the ever-rising need for personnel with advanced postgraduate training, particularly in the sciences where the situation has been described as sinister. Agriculture and Veterinary Medicine are especially vulnerable in this respect, not only because the competition for available personnel is keen, but because nowhere in Ontario is the Ph.D. being offered in such fields as the soil sciences, crop and live stock breeding, nutrition, and animal health. The Ontario Agricultural College and the Ontario Veterinary College have the resources for education at the Ph.D. level, and furthermore, the research participation of Ph.D. students would give valuable returns within the work of the Agricultural Research Institute. The Ph.D. program should be initiated as soon as possible.

Federation and the future

Federation of the Ontario Veterinary College, the Ontario Agricultural College and Macdonald Institute was designed to further the integration of effort among the Colleges and to permit consolidation within areas common to the three Colleges. It might also be considered an intermediate step towards the establishment of a university on the Guelph campus. No change in affiliation relationship with the University of Toronto was introduced by the Act.

Administrative adjustments were the primary feaures of federation. Of major significance was the establishment of a Board of Regents with the President responsible to this Board in which are vested "the government, conduct, management and control of the Federated Colleges and of its property, revenues, expenditures, business and affairs." The Dean's Council of each College deals with affairs pertinent to the College, and the President's Council deals with policy relevant to the campus as a whole. Within central administration the fiscal affairs have been consolidated under the office of the Comptroller; there is now one registrar's office serving the three Colleges; library resources have been consolidated; a department for accommodations and proctoring, and one for student affairs have been established.

The problems associated with federation of the Colleges and with participation in the Research Institute were many and, in certain aspects, complex in nature. The Board of Regents and the administration of the Colleges wish to record, with a deep sense of satisfaction, the willing co-operation of the faculty and staff during this transition period. Grateful acknowledgement is expressed to the Minister of Agriculture, the Deputy Minister of Agriculture, and other administrative officers of the Ontario Government, for their support in meeting the responsibilities being placed upon the Colleges. Under the capable leadership of Dr. D. N. Huntley, Director of the Research Institute, an effective working relationship is being established for the participation of the Federated Colleges in this organization.

The announcement by the Prime Minister, The Hon. J. P. Robarts, in the Ontario Legislature on February 27, 1963, that the Guelph campus will be converted to a university gives rise to the necessity for new concepts in function and operation. Preliminary studies have been initiated relevant to the accommodation of 5,000 to 6,000 students and to the inclusion of additional areas of educational endeavour, at the same time preserving the historic and very necessary function of the Ontario Veterinary College, The Ontario Agricultural College, and Macdonald Institute.

COLLEGE PROGRAMS

The following brief summaries pertain to the work of the Colleges. This work is recorded in greater detail within the annual reports of the Federated Colleges and of the Agricultural Research Institute; in the former will be found reports from departments under central administration for the Federated Colleges, namely, the Registrar, the Librarian, the Comptroller, the Director of Student Affairs, and the Director of Accommodation.

Ontario Veterinary College

The Ontario Veterinary College celebrated its centenary in 1962. A highlight during the special program to mark this event in July was a sod-turning ceremony for two buildings — the Poultry-Virology Building and the Alumni Hall. The latter is being supported by the O.V.C. Alumni Association to the extent of \$100,000 as a centennial gift to the College. The Minister of Agriculture and the Minister of Public Works were the principal participants in this event.

Education

At registration in September 1962 the number of students in the different years was as follows: First—76, Second—80, Third—63, Fourth—68, Fifth—53, total 340. Of this total, 145 were Ontario residents. There were 13 graduate students and 3 special students registered in this academic session.

Student enrolment was higher than it has been for many years and the normal quota of 60 per class year has been exceeded to a point that begins to show an undesirable effect upon the quality of teaching. If a veterinary college is established in Western Canada, as has been proposed, the nation-wide scope of the present operations will be altered.

Research and Services

Progress in the application of research during the year centered around three main areas: (1) A pilot project in the control of mastitis in dairy herds was begun in Southwestern Ontario. The success of this project has given important information for the development of a province-wide mastitis control program. (2) Continuing observations on the technical aspects of freezing bull semen has resulted in a greater use of frozen semen in artificial insemination. Support from the Ontario Association of Artificial Breeders saw the beginning of the construction of a building to house this activity. (3) The replacement of purebred swine herds through the "specific-pathogen-free" swine program made significant progress during the year. A new building for this program will come into use during the next fiscal year.

The research program in general continued to expand to the limits of facilities and personnel.

ONTARIO AGRICULTURAL COLLEGE

Education

The Ontario Agricultural College provided about half of the courses for the B.Sc. students in Macdonald Institute, and all the courses except Zoology for the first year Veterinary students, The Departments of English, Chemistry, Physics and Mathematics, and Botany carried teaching responsibilities for all three Colleges.

Six hundred and sixty-eight students were registered in the B.S.A. degree course. This course is designed to provide fundamental education in the Science of Agriculture, and is available for those choosing careers and occupations such as farming, research and extension pursuits, teaching and postgraduate work. About one-third of the students have a farm background. Convocation was held on May 18, when 128 students received the degree of Bachelor of Science in Agriculture.

The basic purposes of the two-year course for the Associate Diploma in Agriculture are to educate and train personnel for agriculture and related industries, and to develop informed rural citizens. To achieve these ends, the course is designed to give students the opportunity for study and training in the application of science to agricultural practice at the farm level, and in the services and industries related to agriculture. One hundred and ninety-four students were registered in the Associate Diploma course. About 60 per cent of the students had a farm background. Graduation exercises were held on May 16; seventy students received the Associate Diploma in Agriculture.

One hundred and eight students enrolled for the degree of Master of Science in Agriculture. In addition, six special students took one or more graduate courses, but did not proceed to a degree. More than 50 per cent of the students were graduates of universities and colleges other than the Ontario Agricultural College.

The Horticultural Correspondence Course continued to expand, both in terms of courses offered and number of students enrolled.

Research and Services

Research and services account for a greater proportion of the operational budget and total time of faculty than does education. Seventeen departments of the College are engaged in agricultural research and services, and a total of 460 projects were conducted.

Many of the research projects were designed to provide information for the development or revision of specific management recommendations for the various regions of the Province in soils, field and horticultural crops, livestock, and poultry. These recommendations are available in the various bulletins of the Ontario Department of Agriculture. This work is co-ordinated with other provincial and federal experimental stations in Ontario.

Other research projects were undertaken to gain fuller understanding of the principles involved in plant and animal growth and development, these fundamental studies include the many insects, plant diseases, and weeds which create problems in Ontario agriculture.

The acquisition of additional scientific equipment and additional financial aid both from the Ontario Department of Agriculture and from outside sources enabled an expansion in some areas of research. The installation of a 1620 electronic computer greatly assisted in expanding the statistical analyses of research data in animal husbandry, soils, crops, and economics. A Gammacell 220, placed in the Department of Chemistry by Atomic Energy of Canada Limited, made it possible to study the effects of gamma irradiation on biochemical systems, to create genetic variability in field and horticultural crops, and to indicate that it is possible to reduce the number of Salmonella micro-organisms to a safe limit in frozen egg melange by gamma radiation.

A major program was initiated in the Crop Science Department to develop a better understanding of the nutritive quality of forage crops; a forage quality

laboratory based on the *in vito*, artificial rumen technique to estimate dry matter digestibility was established. In the Departments of Animal Husbandry and Nutrition, a study of rumen metabolism, using fistulated sheep, was initiated.

Most members of the staff took some part in the numerous and varied extension services which are carried out regularly for the farmers and the agricultural industries of the Province.

An extensive series of short courses, conferences, and other meetings were held at the College. These were specifically designed for farmers, farm financiers, dairymen, drainage contractors, leaders of farm organizations including co-operatives. seed processors, feed processors, weed inspectors, etc. Other conferences were held for the purpose of bringing up-to-date information and techniques to personnel who are engaged in extension services to the agricultural public.

Several college laboratories are involved in large testing programs associated with agricultural policies. The Departments of Poultry Science and Microbiology conducted blood tests on 1,233,128 chickens from 1,670 flocks, and 150,259 turkeys from 117 flocks, in connection with the Ontario Hatchery Supply Flock Policies. The Department of Agriculture supervised the inspection of 40,156 bee colonies in 2,947 apiaries under the Apiary Inspection Program. The Department of Dairy Science analyzed 25,000 samples of dairy products for fat, protein, lactose, total solids, bacterial count, etc. The Department of Animal Husbandry processed approximately 71,600 livestock records as a service to the various breed organizations and the Ontario Livestock Branch. In the Department of Soil Science. 43,700 soil samples from 13,000 farmers were tested.

MACDONALD INSTITUTE

Education

Two hundred and fifty students registered for the B.H.Sc. degree course 84, 56, 66, and 44 in the first, second, third, and fourth years respectively. Twelve fully qualified applicants for the first year were denied entrance owing to limitations of class-room facilities within Macdonald Institute. In the final year there were 17 students in the foods and nutrition option, 15 in the clothing and textiles option, and 12 in the home management option.

Forty-one students registered for the one-year Diploma Course in Home Economics. As has already been indicated in this report, the Diploma Course is being discontinued in favour of accommodating a larger number of students proceeding to the B.H.Sc. degree.

Research and Services

As co-operators in research at the Ontario Agricultural College, members of the faculty conducted organoleptic tests on eggs in relation to yolk colour; assessed the effects of radiation upon the quality of frozen eggs, vacuum packed bacon, and packaged wieners; and initiated studies on the cooking qualities of beef. Other faculty members tested laundering and bleaching effects upon certain textiles.

The faculty participated in short courses dealing with textiles, laundering, weaving and tapestry, painting, and home management, and in co-operation with the Nursery Education Association of Ontario, a course was provided for teachers at the pre-school educational level. Replies to inquiries on various problems in home economics were also a part of the work.

Horticultural Experiment Stations

The year 1962-63 was an unusual one in that there were no changes in the technical personnel of the Stations, Vineland and Simcoe, except for one replacement at the Products Laboratory. Mr. A. P. Preston of the East Malling Research Station in England spent three months at the Vineland Station in early summer and Dr. A. Hutchinson of the Vineland Staff spent three months at the East Malling Station in the fall. Permitting free exchange of ideas and material, this interstation visiting is bound to be of continuing value over the years. While overseas, Dr. Hutchinson also attended the International Horticultural Congress in Belgium in September and visited some Stations in Belgium, France and England. Dr. J. A. Archibald of this Station attended the Leaf Analysis Symposium held during the Congress and afterwards visited Experiment Stations in West Germany, France, and Great Britain.

In June, 1962, the Director, Dr. W. H. Upshall, was elected a Fellow of the Agricultural Institute of Canada and in January, 1963, Dr. J. H. L. Truscott, Head of the Station's Products Laboratory, was given an Award of Merit by the Ontario Fruit and Vegetable Growers' Association.

Even though the Station is a research institution, it is impossible and impractical, to divert all extension activities to Extension Services. This is true particularly for information on varieties and for direct reports on research activities. However, there is the very closest liaison with the Extension Services of the Ontario Department of Agriculture, particularly with the men stationed at Vineland. In addition to handling numerous phone calls and letters, the Station technical staff (not including the Products Laboratory) spoke at 95 meetings with attendance of 9,085 persons during the year. There were also five radio talks. The "Country Time" telecast in connection with the Niagara Grape Festival originated in the gardens of the Station and two members of the Staff had a part in it.

Grants-in-aid

The Station acknowledges with gratitude the receipt of \$1,677.45 from the Richard Blake Palmer Horticultural Trust Fund in this fiscal year. This makes a total of \$14,754.63 from this fund since its inception in 1945. The money is used to further breeding work with ornamental plants. The receipt of \$1,500, \$500 in each of the past three years, from the American Potash Institute, 100 Dixie Road Plaza, Port Credit, Ontario is also acknowledged with thanks. This money is used for equipment and chemicals in plant nutrition studies at the Station.

Additions and Alterations to Property

In 1962, the Department of Public Works placed motorized valves throughout the greenhouses for automatic heat control; put a new roof on the workshop and one cottage; repaired and painted the chimney and north wall of the Products Laboratory; repaired and painted the water tower; and painted the interior of the Inspection Services Building.

At the Simcoe Station the projects were: erection of 3.4 miles of a watchmantype fence around the property; completion of the workshop and implement shed; erection of a new power line; and construction of a new gravel road from the main entrance to the Blue Line across the property to the west entrance on Culver Road.

At Simcoe, the Station erected a 22' x 100' plastic greenhouse employing two types of construction, one-half with a rigid aluminum frame and the remainder with Porta-green frames.

Plant Nutrition Laboratory

The work of this laboratory is divided into two major parts—(a) the operation of the Ontario Leaf-analysis Service, and (b) research in the broad field of nutrition of horticultural crops.

LEAF-ANALYSIS SERVICE. In 1962, 541 samples were received from growers under the Leaf-analysis Service. Of these samples, 304 were apple, 74 grape, 66 peach, 55 pear, and 42 cherry. Growers pay five dollars per sample for this service.

As in previous years, samples were collected by extension personnel and sent to this laboratory, where both analyses and recommendations are made. The grower response to this Service was greater than anticipated in both 1961 and 1962, and considerably greater than in the previous three years of its operation.

Minor element determinations are made on Service samples in special cases where deficiencies or toxicities are suspected. In 1962, 132 Service samples were analyzed for boron content, and 10 each for manganese and iron.

RESEARCH. Plant analysis is a valuable tool in determining the nature and magnitude of differences due to treatments or conditions affecting the nutrition of the plant. Consequently, much of the effort of the laboratory is spent in analysis of plant samples from the various research projects in plant nutrition. In 1962, 1,176 samples were analyzed for three or more of the nutrient elements. These samples were from investigations dealing with fertilizer response, systems of soil management, varietal and rootstock differences in nutrition and seasonal variation in nutrient content.

In addition to these analyses, some 600 determinations were made in a study involving development, comparison, and evaluation of methods of analysis.

Strawberry Plant Certification Program

The Ontario Strawberry Certification Program was started in 1958 to provide adequate control over production, advertising, and sale of strawberry plants so growers would have reliable sources of healthy planting stock of proven varieties and also of new introductions from breeding programs. The program was established under the Department of Agriculture Act in 1961. The regulations of the program are aimed primarily at preventing virus infection, but certified plants must also satisfy health standards for other major strawberry pests. Viruses have been shown to reduce vigor and yields markedly and, in the past, varieties have been discarded entirely because of virus debilitation.

Officials of both the Ontario and Canada Departments of Agriculture co-operate in the operation of the program. A nucleus of virus-free plants is supplied each year to the Ontario Department by the Genetics and Plant Breeding Research Institute, Canada Department of Agriculture, Ottawa. The plants are propagated one year in a screenhouse to keep out aphids which spread viruses. The Horticultural Experiment Station, Vineland has a screenhouse for this purpose. Plants produced in the screenhouse are called Elite Stock. Elite Stock is propagated in the field for one year by one or two selected growers. Plants produced by these growers are called Foundation Stock. Foundation Stock is further propagated for one year by commercial plant growers for the production of Certified Stock. It is this Certified Stock which growers can buy to start new fruiting plantings. Strict regulations exist for

each stage in the program. Plants are inspected regularly by officers of the Farm Products Inspection Service and the Horticultural Experiment Station, Vineland. Certification tags are issued by the latter.

Certified Stock from this program was first available in the spring of 1961 — approximately 600,000 plants. Production has increased since then with about 1 million plants being available in 1962 and about 3 million in 1963. The rapid replacement of the Premier variety (for which virus-free stock is not available) by Redcoat as the leading variety in Ontario has considerably increased the demand for Certified Stock. Expansion of facilities is needed to meet this demand.

Horticultural Products Laboratory

While the chief functions of the laboratory are research, testing, and development within the fields of processing and storage of horticultural foods, considerable effort and time are spent in extension and demonstration. Regular meetings are held with representatives of wineries, ice cream makers, and canners to examine products of interest to them. Members of the staff regularly attend quality standards meetings elsewhere. Products are demonstrated to public groups at and away from the laboratory. Demonstrations of the effect of cooling fruits are arranged at the request of groups of growers.

Such contacts with industry and the public seem to be essential to the adoption of improved or new techniques or products from the laboratory. Lately, members of the staff have been called for consultation about regulations designed to control quality in horticultural foods.

Kemptville Agricultural School

The activities of the Kemptville Agricultural School continued to expand during the past fiscal year.

The primary function of the School is to provide instruction in Agriculture and Home Economics for students enrolled in the various courses. Increased enrolment of students with higher academic standing and specialization in agriculture, necessitates constant revision and up-grading of course content. All staff members provide extension specialists' services in their respective fields of work and within the area designated to be served by the School.

The School's campus, farm, flocks and herds have been regarded as demonstration projects but now the application of research design to these projects, where applicable, provides factual information which can be used by staff when required in extension work away from the School and provides a broader background for instruction.

The use of the School facilities by groups of people and organizations for meetings, conferences, demonstrations, and courses of instruction continued to expand during the year. Sixty-eight groups, representing a total attendance of twelve thousand, seven hundred and eighteen people were present on the campus and farm under organized arrangements during the year. In addition, hundreds of people visited the School on an individual basis.

The Regional Veterinary Laboratory, located on the campus, provided valuable assistance with instruction for the students in animal health and bacteriology as well as veterinary service for the school herds and flocks. Appreciation is expressed to the Department of Lands and Forests also for the provision of instruction in forestry by the local Zone Forester.

Student enrolment:

Agriculture—2 year course—Juniors	58
Seniors	49
Advanced Course (3rd year) Agricultural Mechanics	11
Home Economics—Juniors	30
Seniors	10
Dairy Course—3 months	23

Eighty-one students received their graduation diplomas in agriculture and home economics on June 2, 1962. Twenty-nine dairy students received their diplomas by mail having successfully completed the courses in dairy manufacturing.

The student organizations on the campus initiated several new, worthwhile activities during the year including a non-denominational devotional service, carried out most effectively by the students themselves on Sunday, February 10.

Forty organizations and individuals contributed bursaries, scholarships and awards, worth well in excess of \$7,000, to students enrolled in the school. These have been of great assistance and encouragement to the young people who have taken advantage of the opportunity to become students at K.A.S.

The reports of the several divisions, which follow, give a more detailed outline of the activities of each as divided into the categories of teaching, extension and research.

AGRICULTURAL MECHANICS DIVISION

The work of this division is divided into three sections, namely, teaching, agricultural engineering extension and research.

Teaching

Lectures and instruction in agricultural engineering subjects are given to the junior and senior students in agriculture, the advanced course in agricultural mechanics. The home economics students are given classes in woodworking and household equipment repair maintenance. Dairy course students are given instruction in sanitary fittings, plumbing, maintenance of electrical equipment and pumps, water supply and sewage disposal.

The following subjects are taught to the agricultural students during the school year: drainage, mechanics, farm water supply and sewage disposal, electricity, refrigeration, hydraulics, instrumentation, materials handling, use of explosives, metallurgy, forging, welding, tinsmithing, plumbing, woodworking, farm buildings, care and sharpening of tools, rope work, farm machinery, motor mechanics, machine shop practices, and the care and operation of earth moving machinery.

The advanced course students were taken on a number of field trips. These included the O.R.F.E.D.A. Show and the Massey-Ferguson Company manufacturing plant, Toronto, and visits to good farms in Eastern Ontario.

This division is also indebted to the following for placing with this division machinery and equipment on consignment for use in classes and demonstrations: Massey-Ferguson Company Limited, J. I. Case Company Limited, International Harvester Company Limited, Allis Chalmers Company Limited, Oliver Plow Company Limited, Beatty Bros., Sass Manufacturing Company, Empire Brass Company Limited, F. E. Myers Company Limited, DeLaval Company Limited and Ketchum Manufacturing Company.

EXTENSION AND FIELD WORK

This division did the engineering work in the eleven eastern counties as follows: Frontenac and Leeds, W. S. D. Hamilton; Lanark and Renfrew, I. M. Balsillie; Carleton, D. A. Knapp; Grenville and Russell, J. H. Clark; Dundas and Stormont, N. B. Sinclair; Glengarry and Prescott, R. D. Kelly. Because of the increase in applications for building service, Mr. L. A. Donoghue was engineer at large, available to assist where he was needed most.

The engineering extension work consisted chiefly of drainage service, building service, 4-H tractor clubs, agricultural night classes and meetings.

Under drainage service 386 farmers were called on and received drainage assistance. Blueprints for 131,629 feet of profile and contoured systematic drainage plans for 1,808 acres of land were surveyed and blueprints prepared for farmers in Eastern Ontario. Forty-seven tile drainage installations were inspected. During the year this division co-operated with the agricultural representatives in planning and conducting 11 drainage field days.

Under building service 494 farmers were called on and given assistance and advice on ventilating stables and constructing new or remodelling farm buildings or designing materials handling systems. Individual plans were prepared for 75 extensive building or remodelling jobs. In 107 of the calls the farmers were advised on

ventilating problems. Approximately 400 prints of farm building plans from a Canadian Farm Building Plan Service were distributed.

Other engineering extension included surveying and advising on the layout and installation of septic tank and sewage disposal systems. Six farmers used the septic tank forms from this division to construct concrete septic tanks. Engineering fieldmen from this division are also called on to advise on the installation of water systems, drilling and care of wells, the layout, construction and equipping of bathrooms, planning and checking electric wiring installations, planning of farm ponds, planning irrigation systems, equipment for land clearing and fence-row removal, and assistance in selecting, adjusting, and repairing farm machinery.

Six staff members of this division instructed and supervised 9 4-H tractor clubs which had a total membership of 132 members. They attended meetings, conducted 10 achievement days, conducted coaching classes and visited the majority of these members at their homes.

During the winter months this division co-operated with the Extension Branch. The Ontario Department of Agriculture, in supplying an instructor for two night classes conducted at Elgin and Alexandria on the subject of welding. The attendance at these classes totalled 33.

During the year speakers were supplied for a number of farm meetings which included breed association barn meetings, milk shippers meetings, spray schools, council meetings, ditch meetings, and Junior Farmer Association meetings.

RESEARCH

Cover Materials for Tile Drains

The Agricultural Mechanics division in co-operation with the Department of Engineering Science, Ontario Agricultural College, is conducting a study into the effectiveness of different cover materials to decrease silting in tile drains installed in silty soils. This field experiment was started in 1960.

The experimental tile installation consists of 18 lines of 4 inch drains 400 feet long of which 3 are checks (blinding with top soil), 3 are blinded with straw, 3 have tar paper above the drains, 3 have tileguard above and below the drains, 3 have tileguard above and duromat below the drains, 3 drains are no-co-rode perforated pipe. No results from this study have been published as yet.

Seed Bed Preparation for Corn

This project is designed to develop methods for minimizing seedbed preparation without adversely effecting crop yields.

The Agricultural Mechanics division co-operated with the Department of Engineering Science, Ontario Agricultural College, and laid down in 1962 plowplant plots in 6 locations in Eastern Ontario. Plant population counts and yields were taken. The results will be published by the Department of Engineering Science. Ontario Agricultural College.

Supplemental Heat

Many inquiries from farmers indicated there was a great interest and a need for a publication on supplemental heat on the farm.

After reviewing available literature and available commercial equipment a manuscript was prepared bringing up-to-date the equipment available and how it

can be used to advantage on the modern farm. This manuscript was submitted to Department of Engineering Science, Ontario Agricultural College and to the Ontario Hydro.

Water Flow From Tile in Osgoode Loam Soil

The Agricultural Mechanics division in co-operation with the Department of Engineering Science, Ontario Agricultural College, are studying the drainage rate from tile drains installed in Osgoode loam soil.

The area being studied is a ten acre orchard with lines of 4 inch tile 30 feet apart between each row of trees, and the water flowing into a pump from which it is pumped into an open ditch. A time meter is connected to the pump and is read daily. This study was started in 1962 and is continuing.

ANIMAL HUSBANDRY DIVISION

The staff of this division is responsible for the lecture and laboratory work in Animal Husbandry. More emphasis was placed on animal breeding, animal nutrition, and marketing of livestock and livestock products.

Members of the staff coached a team of four students which competed in the Inter-School Judging Competition at the Royal Winter Fair. Staff also assisted in arranging student tours to visit outstanding farmers, to study their farm operations. They also visited industrial plants such as a packing plant and a feed processing mill.

The Division was also responsible for the supervision of the farm and experimental projects undertaken with livestock. As well, the Advanced Registry Test Station for beef cattle was supervised and records processed by the members of the animal husbandry division staff.

The Head of the division had the opportunity, during the summer of 1962, of accompanying four Ontario Junior Farmers to Northern Ireland, Scotland and England. This afforded an opportunity to visit many farmers, as well as agricultural colleges, research centres and agricultural shows. A total of ten days was spent in Denmark and Holland, visiting farms and research centres.

K.A.S. FARM

Crops — A greater acreage was devoted to corn for silage and husking, with emphasis being placed on early maturity. Most of the silage acreage was planted to hybrid varieties recommended for husking corn in Eastern Ontario. This silage was fed to both dairy and beef cattle.

Machinery — In order to reduce labor requirements in the operation of the farm, additional machinery was purchased, such as forage unloading wagons and a hay elevator and mow distributor. The use of the hay drier continued to show considerable advantage in the making of hay. There is considerable interest in this equipment throughout Eastern Ontario.

Livestock — A small beef herd of Shorthorns is maintained for classroom work. A breeding project has been set up with the herd, to try to demonstrate the effectiveness of following recommended breeding and selection procedures.

The following is a summary of the production records completed by the dairy herd during the year, with all records on 305 days.

Herd Average

Breed	No. Completing Test	Lbs. Milk	Lbs. Fat	Average Test
Holstein	18	14,038	578	4.12
Ayrshire	5	9,029	364	4.03
Jersey	3	7,243	426	5.88
Herd	! Index	Milk	Fat	
Holst	tein	130	146	
Jerse	y	125	125	
Ayrs	hire	122	118	

Sheep Flock. The North County Cheviot flock was divided into two groups. one group being bred to purebred North Country Cheviot ram, the other group to a Leicester ram, in order to provide some ewes for cross-breeding work.

RESEARCH PROJECTS

Pelleted Complete Rations vs A Conventional Ration for Fattening Beef Calves

Six Shorthorn steers and two heifers were used to compare the merit of a pelleted complete ration with a conventional ration fed free choice. The same ingredients made up both rations but in the case of the pelleted complete ration the proportion of roughage to grain consumed was controlled by the experiment and not by the animal's choice.

The ration of hay to grain in the experimental ration was 1:1.25 for the first 84 days and 1:2 for the remainder of the trial. The ration of hay to grain in the control ration fed free choice was about 1:6.

The individuals fed the pelleted complete ration consumed considerably more hay and somewhat less grain per pound gain than the individuals on the control ration. As a consequence the cattle on the experimental ration made slightly cheaper gains (20.8 vs 22.1 cents per pound) than did the control group. Essentially the same daily rates of gain were made on each of the rations. A significant difference in pounds of crude protein per pound of grain was noted; those individuals on the control ration required 0.88 pounds while those on the experimental ration required 1.27 pounds. No measurable differences in carcass characteristics were observed.

It should be stressed that this experiment involved only eight animals, six of which were slaughtered. The small numbers involved make it necessary that differences be quite large in order to be designated significant. The experiment, nevertheless, has indicated that steers and heifers fed on a pelleted complete ration consisting of one-third roughage and two-thirds grain will gain just as rapidly and

at least as economically, and will yield as desirable a carcass as animals full fed on a grain ration plus a free choice of hay.

Since no great advantage was realized, however, future research in this area will explore the possibility of increasing the roughage proportion in the pellets.

Fly Control

Through the co-operation of a number of chemical companies, various chemicals were compared for the control of flies, both on livestock and in farm buildings. Particular emphasis was placed on control of face flies. Products tested included Dimethoate, DDVP, Toxaphene, as well as commercial products which used such products as Pyrethrins and Synergists (pipironyl butoxide) as killing agents.

Toxaphene was used in oil base in commercial back rubbers (horizontal) for beef cattle and on dry dairy heifers for all types of flies. There were always a few face flies on the cattle, but the irritation around the eyes was practically eliminated. Dimethoate and DDVP in a syrup and water mixture appeared very promising and will be continued in 1963 for face fly control. Malathion, Bayer 29493 and Dimethoate were used in barns. Malathion gave effective control for the lowest cost but others were most effective.

Estrus Control

An attempt has been made to synchronize the estrus cycle in beef cows by the use of a synthetic progesterone. The product, Provera (6 methyl 17 acetoxy-progesterone) was administered to three Shorthorn cows. During the treatment period of eighteen days no estrus was observed. All three females manifested estrus within three days post treatment and were bred. Two of the cows conceived to service at either the first or second post-treatment estrus, while the third cow did not conceive. She continued to cycle on the newly established estrual pattern. Estrus control is considered important in the beef herd because it facilitates the use of artificial insemination and makes possible planned breeding and calving dates.

High Roughage Pelleted and Complete Ration vs. Pelleted Corn Ration vs. Corn Silage for Fattening Yearling Steers.

A feeding trial is currently in progress to compare the relative merit in terms of rate and economy of gain and carcass quality of three systems of feeding market steers. Twelve Hereford steers were assigned randomly to three groups of four steers each. The ration for one group is a full feed of corn silage plus three pounds of soybean oil meal per head per day. The ration for the second group is corn and soybean oil meal in pellet form plus hay free choice. The third group is receiving a pelleted complete ration made up of 65% ground hay and 35% corn and soybean oil meal. Data on rate and economy of gain is being recorded for future analysis.

Holstein-Hereford Crossbreds vs. Herefords. In conjunction with the previous trial four crossbred Holstein x Hereford steers are being fed the same corn and soybean oil meal ration as one of the groups of four Herefords. It is intended to compare the rate and economy of gain as well as the carcass quality of these two groups of steers.

The effect of Implanted Stilbesterol on Gains of Market Steers. Superimposed over the foregoing trial is an attempt to measure the response to implanted stil-

besterol. Two of each group of four steers received a 36 mg. implant at the start of the feeding trial. Rate of gain and carcass quality will be compared between the implanted and non-implanted groups.

Breeding Project in the Kemptville Agricultural School Shorthorn Herd

A long-term breeding project has been established in the Shorthorn herd with the following purpose. To demonstrate the effectiveness of following recommended breeding and selection procedures in improving a beef herd. It is intended to use only high gaining performance tested sires and to cull females on the basis of their calves weaning weights and yearling weights and their own reproductive performance and type.

This program has been in operation for two years and three of the seven original cows in the herd have been culled from the breeding herd. Rate of progress will be recorded and reported. The herd is presently on the Herd Test Program of the Ontario Department of Agriculture and it is intended to apply whatever aids to selection for the improvement of the herd as appear practical.

Carcass Analysis of Show Steers

Carcass and performance data on sixty-seven steers representing the Shorthorn, Aberdeen Angus and Hereford breeds and shown at the 1962 Ottawa Winter Fair is presently in the process of analysis. Carcass data includes (1) dressed weight, (2) dressing percentage, (3) shrink, (4) loin area, (5) fat depth. Performance data includes (1) live weight, (2) weight per day of age, (3) show ring placing.

These data are being studied to establish the inter-relationships between these various characteristics and to determine if breed or weight group differences exist. Although statistical analysis is not complete the following interbreed comparisons are presented.

Inter-Breed Comparisons on Carcass and Performance Data

Characteristic	Aberdeen Angus	Hereford	Shorthorn
Live Weight	794 !bs.	984 lbs.	831 lbs.
Weight per Day of Age	1.83 lbs.	1.98 lbs.	1.99 lbs.
Loin eye area per cwt. carcass wt	2.02 sq.in.	1.94 sq.in.	1.78 sq.in.
Total Fat Depth	.76 in.	.84 in.	.82 in.

It is planned to continue this project annually to obtain sufficient data for meaningful analysis. Preliminary analysis indicate that the Aberdeen Angus steers have a significantly lower weight per day of age than either the Hereford or Shorthorn steers and that Shorthorn steers have a significantly smaller loin eye area than either Herefords or Aberdeen Angus steers. The present study will indicate whether relationships exist between the various measurements taken.

This work has been done in co-operation with the Ottawa Winter Fair, the Federal Grading Service and the Canada Packers plant in Hull, Quebec.

Relationship between Rate of Gain and Sale Price of Advanced Registry Tested Beef Bulls

Price data has been obtained from the Ontario beef bull sales to establish the degree to which rate of gain and lifetime gain affect the sale price of the bull. The degree of relationship between price and performance reflects the buyers' awareness of, and acceptance of, rate of grain as a measure of merit on beef sires. Preliminary analysis indicates that there is a correlation between Advanced Registry performance and sale price. Data is now available on almost 500 bulls and further analysis is planned.

Advanced Registry Bull Test

During the past year sixteen bulls have completed the Advanced Registry test at the Kemptville Station. Bulls are tested both for average daily gains on test and for weight per day of age to the end of test. All of the sixteen bulls were Hereford. Of the sixteen bulls tested twelve qualified on performance with gains on test up to 3.33 pounds per day.

Milk Composition Studies

Milk composition studies are being made with the Kemptville Agricultural School dairy herd in co-operation with the Dairy division. Milk is tested monthly, at time of butter fat test conducted by the Record of Performance inspector, for solids-not-fat and protein. As well the effect of such factors on milk composition as stage of lactation, breed, age of cow, morning versus evening milking, are included in the study.

CHEMISTRY AND SOILS DIVISION

The activities of this Division are summarized under the following headings:

Teaching

The following lecture and laboratory classes are provided for regular students enrolled at the Kemptville Agricultural School. Lectures in chemistry, soils, fertilizers and mathematics were given to the junior and senior classes in Agriculture. Soils and farm planning were given to the advanced course in agricultural mechanics, and inorganic and organic chemistry to the junior and senior classes in home economics. Laboratory periods in chemistry, soils and fertilizers are given in conjunction with the lecture classes.

Extension

(a) During the calendar year a total of 4,272 samples of soil were received for analysis. These samples were sent to the Soil Testing Laboratory, Department of Soil Science, Ontario Agricultural College, Guelph, Ontario, and the results returned to this office for fertility recommendations. Reports covering the recommendations for fertilizer use, agricultural limestone requirements, and cultural practices were sent out to the farmers with duplicate copies of the recommendations to the respective Agricultural Representatives. During the past year, seven Agricultural Representatives from Eastern Ontario were given further instruction on making fertility recommendations from soil analysis, and are presently making fertility recommendations for their respective Counties.

During the year thirty-seven meetings were attended, discussing problems related to soils, lime and fertilizer use. Personnel from this division visited eight secondary schools outlining the course of study that is presently being offered by the K.A.S. Representation from this division was also included on several Provincial advisory committees that held meetings throughout this past fiscal year. During the past year, the first Land Judging Competition in Eastern Ontario was carried out by personnel within this division, in co-operation with Agricultural Representatives from Leeds and Grenville Counties. The personnel were responsible for the program arrangements for the second annual fertilizer dealers' conference which was held at K.A.S.

Research (Demonstrational and Experimental Field Work)

During the past year fertilizer trials were established on farm fields to further evaluate the yield response for soil test calibration data. Five trials were located on five predominant soil types in Eastern Ontario to evaluate the response of oats to broadcast applications of 0-15-30 and 45 lbs. nitrogen per acre, and 0-30-60 and 90 lbs. of phosphorus and potash per acre. These plots were randomized and replicated for each treatment.

The soil tests ranged from low to medium for nitrogen and from medium to high for phosphorus and potash. One location was lost due to hail damage. On the four remaining locations, from which yield data was obtained, no significant increases were obtained from the addition of any of the three nutrients.

Demonstration plots were also set out on farm fields to note the response to fertilizer materials for oats and barley. A significant increase in the plots receiving fertilizer was noted over the check plots, with the highest average yield for both barley and oats being noted on the plots receiving 16-8-8 at 175 lbs. per acre and 110 lbs. per acre respectively.

Further demonstration plots were set out on established hay and pasture fields, applying nitrogen in the spring and fall, with and without phosphorus and potash. No significant difference between late fall and spring applications of nitrogen was noted on the first cut — this may be partly due to a very dry spring. However, a substantial increase was noted in the second cut hay on the treatment receiving nitrogen in the spring along with the fall application of 300 lbs. per acre of 0-20-20.

On another established sod field, with approximately 30 percent legumes, fertilizers were applied after the first cut of hay was removed in late June. Again, the complete fertilizer treatment containing nitrogen, phosphorus and potash showed a much better response than the plots receiving similar rates of the individual nutrients. It was also interesting to note a marked increase in the potash deficiency as indicated on the alfalfa leaves on the treatment receiving the highest level of nitrogen.

Finally, different levels of nitrogen were applied by broadcast application on an old grass pasture and, although no accurate yield data was obtained from the trials as cattle were pasturing on the area, it was quite evident that although the cattle had free choice they continually pastured off of the fertilized plots in preference to the untreated area.

Personnel from this division also assisted in setting out demonstration trials within the various Counties, in co-operation with Project Committees of the respective Soil and Crop Improvement Associations.

DAIRY DIVISION

Teaching. The teaching duties carried on by the staff of this division are about equally divided between instructing the three month dairy course and the diploma course in agriculture. Some instruction is also given to the girls' classes in home economics.

Registration in the Dairy course from January 7th to April 4th, 1963 was 23, with one additional student enrolling for the three weeks work on milk testing and grading.

The slightly longer fall term permitted a better coverage of the work in dairying with the senior students in agriculture and in microbiology with the juniors in agriculture.

The facilities for teaching were improved by the installation of fluorescent lighting in the basement testing laboratory. Improved facilities for cooling milk and cream were also installed.

Extension

As a service to dairy farmers and milk plants in the counties of Leeds, Grenville and Dundas, the Dairy branch and the Kemptville Agricultural School established a Regional Milk Testing laboratory in the dairy building in July of 1962. One room of the building was turned over for this purpose and provided with the necessary new laboratory and office facilities. The staff of the laboratory is employed by the Dairy branch but is under the direction of the Head of the Dairy division.

Chilled samples from all milk producers supplying cheese factories or concentrated milk plants in the above three counties are brought to the laboratory monthly for examination. From the commencement of operations until March 31st, 1963 over 29,000 such samples were examined by the resazurin test. Most of these were also tested by the Danish Mastitis or Gel test for abnormalities.

During the year two conferences were held at the School for the milk sanitarians and inspectors of the area, as well as two similar meetings for the cheesemakers of Eastern Ontario, with good attendance at all four meetings.

Addresses were given to about 15 groups on subjects connected with dairying and help given to a number of Dairy Princess competitions.

RESEARCH

The Market Reception of Ontario Cheddar Cheese in the United Kingdom

In August, 1962, the Head of the division was granted permission to visit England and Scotland to interview buyers of Ontario Cheddar cheese in London and Glasgow. Calls were made on 8 of the principal dealers to learn whether recent shipments were meeting their specifications satisfactorily. Serious complaints had previously been registered regarding 1959 and 1960 cheese. The popularity of cheese in 40-pound blocks was especially investigated. The following is a summary of the opinions collected: (1) Ontario cheese was proving highly acceptable among all the dealers interviewed. The flavour of our cheese is particularly well regarded and is the reason for the higher price we receive for it. Complaints were of a minor character and dealt mostly with branding, wiring of boxes, extraneous matter or cheese which were weak or loose textured. The

"off" or "catty" flavour defect complained of in 1960 was not a problem. (2) Block-shaped cheese were not being accepted too enthusiastically by retailers, although the demand for them will undoubtedly grow. The opinion is quite prevalent that blocks do not mature as fully nor as rapidly as do 90-pound Cheddars. (3) Some of our 1961 cheese were reported to have failed to mature well, although this complaint was not being made regarding any of the 1962 cheese so far received. (The results of this survey have been reported to a number of interested groups, and have been published in the report of the 1963 annual meeting of the Ontario Cheese Producers Marketing Board.)

The Numbers of Non-lactic Bacteria in the Milk Supplies of Cheese Factories and their Relation to Bacteria Counts in the Cheese. (Project KD-'62-1).

Composite samples of milk representing 21 vats of raw milk cheese made at four different factories were examined bacteriologically. The numbers and types of organisms found were later related to similar tests made on the cheese. These counts were made after $\frac{1}{2}$, 1, 3, 6, 12 and 26 weeks of curing.

In addition the cheese were graded twice and were rated for intensity of cheese flavour. The non-lactic types increased greatly in numbers until the third week when they began to decline in numbers. The average count for 12 lots which remained in first grade when regraded was 70,000,000 per gram, while in 9 lots which declined in grade this figure was 310,000,000.

High counts of alkaline-forming bacteria in the milk supplies were frequently found to predispose cheese to develop "off" or unclean flavours after about four months curing.

No clear relationship was found to exist between bacterial populations and intensity of "cheese" flavour.

Variations in the Composition of Milk from the K.A.S. Herd as Revealed by the Golding Plastic Bead Test for Solids-Not-Fat and the Amido Black Test for Protein. (Project KD-'61-III).

This project, being conducted in co-operation with the Animal Husbandry division, and scheduled for completion in July, 1963, was continued throughout the year. Improvements were made in the method of determining protein.

Other Research and Service Work. The following articles were published: Effects of vacuum treating on the texture qualities of Cheddar Cheese. O. R. Irvine and K. A. Burnett, Can. Dairy and Ice Cream Jour. 41:8, pp. 24, 26, 28, 1962. Study shows only minor variations in cheese composition in past ten years. O R. Irvine, M.E. Beach and K. A. Burnett, Can. Dairy and Ice Cream Jour. 41:9, pp. 36-38, 1962. A method of enumerating non-lactic organisms in fresh Cheddar cheese. (Abstract only) O. R. Irvine and M. E. Beach, Jour. Dairy Sc. 45:5, 648, 1962.

Service activities of the Division included performing the following tests on samples submitted:

Fat test on milk and cream, 272; Advisory resazurin and gel tests, 115; Yeast and mould counts, 39; Bacteria counts on milk, 24; Tests for inhibitory substances, 76; Other specialized tests, 43

The collection of lactic cultures was maintained throughout the year. Requests for these resulted in 294 bottles being sent out to dairies and cheese factories.

ENGLISH AND ECONOMICS DIVISION

Teaching In this double Division the program of teaching is as follows:

English: Juniors and Seniors in Agriculture and Home Economics, as well as Advanced Course (Agricultural Mechanics)

Public Speaking: Junior Agriculture and Home Economics

Civics and Rural Leadership: Senior Agriculture and Home Economics

Public Relations: Advanced Course (Agricultural Mechanics)

Agricultural Economics: Junior and Senior Agriculture

Farm Management: Senior Agricultural and Advanced Course (Agricultural Mechanics)

Supporting activities to teaching included supervision of student newspaper publication; Yearbook; Public Speaking Competition; choral work; Christmas concert; weekly Literary Society programs; Sunday church service; arrangement of graduation details and program; student counselling; official adviser to incoming Junior year in agriculture; honorary president of graduating year in agriculture 1962; preparation of official School calendar; secretarial duties to Admissions Committee, staff meetings and Scholarship and Bursary Committees; preparation and administration of special examination to screen prospective students; administration of student health insurance program.

The use of library facilities is taught to all students at K.A.S. and constant help provided to staff and student requirements for teaching material and assignment resources. Purchase of books and cataloguing are part of the duty of administering the main School library.

Extension

Speeches were delivered to nearly 200 persons in rural communities, particularly to 4-H, Junior Farmer and other farm organizations, as well as to service clubs.

Public relations work included: student liaison for three counties; exhibits supervised for the Central Canada Exhibition and the Ottawa Winter Fair; radio, press, tape-recordings, and television releases for Eastern Ontario particularly, as well as guidance of visiting representatives of press, radio and television groups seeking programs or information at K.A.S.; management of scheduled visits from some 600 secondary school students and staff members to K.A.S.; adjudication of public speaking finals up to Provincial level and provision of a course in Effective Speaking at Junior Farmer Provincial Camp.

The extension work carried out by the farm management specialist in the past year tended to concentrate in three main areas: (1) Accounting: Assistance was given to many farmers in farm accounting problems. These problems involved both keeping farm accounts and interpreting the analysis. Four farms in Eastern Ontario were introduced to a pilot project in "electronic" book-keeping. This project is being carried out in co-operation with the Economics Department of the Federated Colleges. (2) Farm Business Agreements: About 20 farmers were referred to the farm management specialist by Agricultural Representatives for information on Farm Business Agreements or else came to the School themselves in search of this information. In as much as each case requires a great deal of individual attention, the Economics Division held a one-day conference at the K.A.S. on Farm Business Agreements. Over 125 farmers attended this conference. (3) Farm Management

Programs: Assistance was given in establishing and servicing four Farm Management Associations involving 100 farmers in Eastern Ontario. In addition a number of public meetings were addressed by the farm management specialist, and individuals were assisted in budgeting out adjustment problems.

Research

Records were kept on crop practices and yields for the ninth year on an area already surveyed and likely to have a portion drained eventually to compare long term yields on drained and undrained land under the same management.

The Division supplies a member to two committees set up under the Agricultural Research Institute of Ontario: Marketing (Livestock and Livestock Products) and Production Economics.

Two members of the staff participated in the C.A.E.S. Workshop on Problems of the Dairy Industry in Canada.

One instructor attended a yearly refresher course for Instructors designed solely to improve existing methods of teaching public speaking.

FIELD HUSBANDRY DIVISION

Teaching

Principles of crop production are emphasized in lecture and laboratory instruction. Junior students are trained to appreciate the essentials in growing, protecting, harvesting, storing and preparing for market, crops for cash sale and livestock feed. Instruction for senior deals with forage crops and cropping systems to supply feed throughout the year. The subject of weeds and their control by cultural and chemical means, is included. Training in the use of reference literature is stressed.

Extension

A cordial invitation is extended to farmers and other interested persons to visit the Division to inspect the experimental plot work, examine findings and discuss with Staff members their crop production problems. Several 4-H Club groups were included among those who took advantage of this service. Assistance was given in sponsoring at K.A.S., a Grassland Day during June, and the Eastern Ontario Soil and Crop Improvement Association Annual Conference during January.

County Soil and Crop Improvement Associations were provided with seed and field plans for field crop demonstrations with corn, cereal and forage crops. Agricultural organizations, including County Soil and Crop Improvement Associations and Livestock Breed Associations were assisted by the Division providing addresses on 26 occasions. The Head of the Division was Secretary of the Eastern Ontario Soil and Crop Improvement Association until September, when he became Director of the Crops and Soils Branch at Toronto. The Ottawa Valley Seed Fair was assisted by staff in planning and judging exhibits at the annual show.

At the beginning of December, the Head of the Division was appointed Chairman of a Tobacco Industry Inquiry Committee, covering the flue-cured industry of Ontario. As a guest of the Tobacco Export Promotion Council of Rhodesia and Nyasaland, the Head of the Division paid a return three-week visit to that country during February and March. He was privileged to view the exceptional progress made there in agricultural research, teaching and development in recent years.

Research

To facilitate integration of the field crop research program with similar work undertaken elsewhere in Ontario, staff members served on the following committees: The Ontario Forage Project Group, The Ontario Corn Committee, The Ontario Cereal Project Group, The Ontario Committee on Field Crop Recommendations, The Eastern Section of the National Weed Committee and The Ontario Advisory Committee on Herbicides. The Head of the Division has been a Member of the Agricultural Research Institute of Ontario since its formation.

The splendid co-operation and assistance of both the Crop Science Department of the Ontario Agricultural College and the Central Experimental Farm of the Canada Department of Agriculture made it possible to carry on several useful lines of investigation and crop evaluation. Threshing and processing of data from all cereal and forage plot tests had to be done at Ottawa, while facilities for determinations and calculations of dry matter on all forage plot material were made available at Guelph. Despite the need, under this system, to label, store, pack and ship hundreds of samples and to fit their handling and processing into programmes at those institutions, the results obtained eventually, were reliable in the majority of instances.

Those projects which were active in 1963 are listed. The descriptive title gives an indication of the nature of the investigation.

Crop	Descriptive Title
Forage (year of seeding in parenthesis)	Uniform Bromegrass Variety Test ('61) Alfalfa Screening Test ('60) Orchardgrass Strain Test ('59) Ontario Uniform Red Clover Variety Test for Hay ('61 & '61) Ontario Uniform Red Clover Variety Test for Seed ('60 & '61) Birdsfoot Trefoil Variety Test ('56) Provincial Hay-Pasture Test on Fair Drainage ('61) Birdsfoot Trefoil Mixture Test ('56) Pasture Mixtures ('59) Annual Forage Test Birdsfoot Trefoil Growth Phase Study
Corn	Ontario Hybrid Corn Test Hybrid Corn Performance Test Corn Silage Test (Dates of planting) Breeding Early Maturing Combine Corn Single Cross Yield Test Single Cross Spacing (Population) Test
Oats	Oat Strain Preliminary Test Oat Strain Screening Test Eastern Ontario Co-operative Test (High Fertility)

and (Medium Fertility)
Regional Oat Variety Test

Barley	Barley Strain Screening Test Eastern Co-operative Test Regional Barley Variety Test
	Regional Bariety Variety Test
Winter Wheat	Regional Winter Wheat Test
White Beans	Regional White Bean Test
Soybeans	Regional Soybean Test
Rape	Regional Rape Variety Test
Sunflowers	Regional Sunflower Variety Test
Testing Technique	Border Row Effect (Cereals)

Data from most of these tests were used in making recommendations in Publication 296 "Field Crop Recommendations for Ontario 1963", and were considered in licensing new varieties and hybrids.

Length of growing season limits more than anything else the use of corn in Eastern Ontario. In search of more information relating to maturity, 44 comparative tests were completed on farms in 11 counties of Eastern Ontario from 1959 to 1962. Each season, two hybrids, chosen from the recommended list to represent what was termed early, late and too-late maturity, respectively, were planted for comparison. The early hybrids were in the group formerly referred to as the 58 to 90-day maturity range. Average yields of dry matter, green weight and per cent of water in the silage at silo-filling time are shown in the following table.

Tons per Acre					
Maturity of Hybrid	Dry Weight	Green Weight	Percent Water		
Early	4.5	17.7	74.3		
Late	4.4	20.5	77.1		
Too Late	4.2	21.5	79.4		

Silage from the early hybrids containing a higher ratio of cobs to stalks and containing less water, provided more feed per acre than the later ones and required less silo space per acre and per ton of dry matter stored.

To demonstrate further the effect of maturity date, those hybrids representing the three maturity groups were planted in an experiment to compare the effect of delay in planting on each group. In the following table the data on dry matter produced per acre when hybrids of three maturity groups were planted at a two-week interval in 1962 are summarized.

Maturity of	Planted May 23, 1962		Planted June 6, 1962	
Hybrid	Per Cent Water	Tons per acre	Percent water	Tons per acre
		Dry Weight		Dry Weight
Early	66.5	4.1	73.8	4.0
Late	68.3	4.9	77.6	4.2
Too Late	74.6	4.8	80.6	3.8

The 1962 season was exceptionally favourable for silage corn in Eastern Ontario. These data indicate the need to select only an early hybrid for ensilage whenever planting has to be delayed, even in a good corn season.

HOME ECONOMICS DIVISION

During the school term, from September 24th till April 19th, the one year homemaker and two year diploma courses in home economics were offered. The number enrolled during the year included 10 senior students and 30 junior students, among these were students from 15 counties of Ontario, one from Quebec Province, and one from Bermuda.

The academic standing of students this year showed a greater proportion of students having grade XII standing, as compared with any other year. The usual classes of instruction, with lectures and laboratory work, were given in the following subjects: applied arts, textiles, clothing, home furnishings, home management, foods, nutrition, family living, child care, health education and home nursing. Certificates were given by the Red Cross Society and St. John Ambulance Association for completion of their courses in home nursing and first aid. Instruction in the above courses was divided among four instructors, two full time, one casual and one part time instructor.

Other divisions provided instruction to home economics students in the following courses: bacteriology, chemistry, civics and rural leadership, English, horticulture and woodworking.

In relation to the Civil Defence Program, home economics students co-operated with the local hospital in a disaster plan work out. A field trip to the Civil Defence College at Arnprior also proved to be informative and worthwhile.

Other field trips related to courses in home economics supplemented regular course work.

The K.A.S. Royal and the annual fashion show again proved valuable means of displaying achievements as well as demonstrating abilities of co-operation and leadership. These events also make for good public relations, with large outside audiences participating.

Residence accommodation and class room facilities for home economics students are at present being used to capacity. Prospects for larger enrolment for the coming year will mean considerable overcrowding of all present facilities for home economics students.

Direction of meal service for all students, general furnishing and housekeeping in residence is the responsibility of this division under day to day supervision by the housekeeper.

Many visiting groups were received, making use of residence and dining hall facilities during the interval from April to September.

The total number of meals served to regular students and to visiting groups was approximately 77,000.

Extension services included: Talks to various women's groups; Open house programme at K.A.S. for visiting secondary school students, a series of planned visits on five consecutive days — approximately 675 attending; Contacts and visits with prospective students; Assistance in judging at local high school achievement day; Providing classroom equipment and facilities, as well as residence accommodation and meals for Leaders' Training Institute — 1 week course — approximately 100 attending; Providing residence accommodation and meals for Meat Inspectors' Course — 6 week course — 21 attending.

HORTICULTURE DIVISION

Teaching

During the school term, a course of lectures, laboratory work and practical instruction was given to the students in Agriculture. The subject matter covered fruit growing, vegetable culture, plant diseases, floriculture, botany, destructive and useful insects. As well a series of lectures in floriculture was given to the students in Home Economics.

Extension

During the summer months, apple spray service circulars for local apple growers originate in this Division. In co-operation with the office of the Grenville County Agricultural Representative, they are distributed to growers. In 1962 some eleven of these information letters were sent out. As well, some 166 visits were made to various farms to assist growers in their fruit growing problems.

Extension in landscape gardening was not as extensive as in previous years due to the resignation of H. S. Ransom at the end of June. To replace Mr. Ransom, J. P. Mansfield was appointed in September. Fifty-two calls were made to give advice on horticultural and landscape problems. Members of this Division judged at five Horticultural Shows and two Home Ground Competitions.

During the summer months, the Horticultural Division is responsible for the care and maintenance of 30 acres of campus, 12 acres of fruit trees, and about 2 acres of garden and small fruits.

Research

Fungicide program for apple scab control

The month of May and the first part of June were fairly dry. Up to the 19th on June, there were only four primary infection periods. During July, there were six rainy periods when scab could spread. Fungicide sprays were applied on May 1st, 8th, 14th, 4th, 28th, June 11th, 18th, 25th, July 3rd and 13th. Primary infection became apparent on May 23rd. The school orchard was divided into four sections — each section received a different fungicide program.

Date	Plot I	Plot II	Plot III	Plot IV
May 1	Phygon ½ lb.	Glyodin 1 pt. +Mercury ½ pt.	Glyodin 1 pt. +Mercury ½ pt.	Cyprex ¾ lb.
May 8	Phygon 1/4 lb.	Glyodin 1 qt.	Glyodin 1 pt. +Cyprex ½ lb.	Cyprex ½ lb.
May 14	Phygon ½ lb.	Glyodin 1 qt.	Glyodin 1 pt. +Cyprex ½ lb.	Cyprex ½ lb.
May 24	Phygon 1/4 lb.	Glyodin 1 qt.	Glyodin 1 pt. +Cyprex ½ lb.	Cyprex ½ lb.
May 28	Phygon 1/4 lb.	Glyodin 1 qt.	Glyodin 1 pt. +Cyprex ½ lb.	Cyprex ½ lb.
June 11	Phygon 1/2 lb.	Phygon ½ lb.	Cyprex 3/4 lb.	Cyprex 34 lb.
June 18		Glyodin 1 qt.		
June 19	Phygon ½ lb.		Cyprex 3/4 lb.	Cyprex 3/4 lb.
June 25	Captan 1 lb.	Cyprex 1/4 lb.	Cyprex 1/4 lb.	Cyprex 1/4 lb.
July 3	Captan 1 lb.	Cyprex 1/4 lb.	Cyprex 1/4 lb.	Cyprex 1/4 lb.
July 13	Cyprex 1/4 lb.	Cyprex 1/4 lb.	Cyprex 1/4 lb.	Cyprex 1/4 lb.

Scab control on Plots II, III, and IV was excellent. Scab control on Plot I was not as good. At harvest time, Plot I contained a percentage of apples showing pinpoint scab. The repeat applications of Phygon on this Plot caused damage to the leaves and they developed a pale green colour. Fruit colour was poor also. The trees in all Plots bore a full crop of apples.

862 Oil Plus Cyprex Spray Applications to Apple Trees

Since there is renewed interest in the use of oil to control mites on apples, an experiment was set up to determine the effectiveness and phytotoxicity of an experimental emulsifiable oil 862, supplied by the Imperial Oil Company, when combined with the fungicide Cyprex. In 1960 this oil was combined with the fungicide Dichlone and proved phytotoxic to the trees. In 1961 this oil was combined with Cyprex and applied to different trees on May 8th, 15th and 20th. On July 27th the trees sprayed on May 20th were given a second application. There was no apparent phytotoxicity from the first three applications. However, the application of July 27th on the Delicious trees, used for the June 20th application, caused considerable damage to the leaves. All trees bore heavy crops of apples and mites did not become a problem.

Since McIntosh were not included in the 1961 plot and since McIntosh is the chief variety grown in the area, the tests were repeated in 1962 using only McIntosh trees. Two percent 862 oil plus Cyprex ½ lb. was applied to McIntosh trees on May 1st, 8th, and 14th. On July 13th, the same trees sprayed on May 14th were sprayed again. This time the spray mixture contained DDT and Lead Arsenate as well.

No Phytotoxicity was evident from any of the 862 oil plus Cyprex applications in 1962. Mites did not become a problem either. These trees bore a full crop of apples.

Suppression of Grass and Weeds under Apple Trees

The chemicals Dowpon plus 2, 4-D were applied to the vegetation beneath the apple trees on June 13th. The area beneath the trees, having a radius of about ten feet, was covered with spray. Approximately 1½ gallons of spray mixture was used under each tree. Dowpon was used at the rate of 1, 1½, 2, and 2½ lbs. per 100 gallons of water. 2, 4-D Amine to provide 16 ounces per acre was added to the Dowpon. The addition of 2,4-D to the Dowpon controlled the annual weeds. The Dowpon suppressed the grass growth during the early part of the summer. Toward fall, however, the areas receiving the least Dowpon had recovered to a normal stand of grass. The areas receiving the maximum amount of Dowpon had the best grass suppression. However, under conditions of last summer, these areas too recovered and at picking time there was a fair amount of grass growth.

Apple Variety Orchard

Between 1937 and 1939 a variety test apple orchard on hardy Anis root stock was set out. Twenty-four different varieties were planted. In 1962 every other row was removed. This removed a number of undesirable varieties and also made room for setting in new varieties on new root and stem stock. Some of the varieties removed include:

Hume — removed because of severe winter killing; Joyce — removed because of production of soft, rough apples that are difficult to market free of bruises;

Wealthy — removed because of limited public demand; Atlas — removed because of limited public demand; Lawfam — removed because of limited public demand.

It is hoped that in 1963-64 these rows will be replanted to new varieties on Malus Robusta 5 root stock.

Apple Insect First Appearance Observations

In connection with the apple extension program, it is of value to know the exact time when apple insects make their first appearance so that proper recommendations may be made for their control. This is particularly true for apple maggot and codling moth. For example in 1962, codling moth — first fruit entry was found on June 26th; apple maggot — first apple maggot fly was seen on June 27th; oyster shell scale — first began hatching on May 23rd; and red mite — began hatching about May 16th.

POULTRY DIVISION

The Poultry division is under the supervision of one man who is responsible for lectures and laboratory work in poultry, meats and marketing.

This Division is responsible for the supervision of the poultry plant and its operation. The poultry flock, this past year, consisted of about 14,000 chickens and 400 turkeys, with a laying flock of about 1,400 birds and a breeding flock of approximately 600 birds.

The breeding flock is made up of three strains of Leghorns. One strain is an inbred strain for eight years. The other two strains are blood bank strains which are maintained for the Dominion Government, and eggs from these flocks are shipped to any hatcherymen across the Dominion requesting this stock.

No breeds of heavy meat type birds were kept over for breeding stock this year, mainly due to the high cost of feed and poor egg prices. Baby chicks can be purchased for less money than to maintain breeding stock.

Some demonstrations and experimental work was carried out on the poultry plant as follows:

To test the effect of Nilevar on laying hens re fertility, hatchability, and sex of chicks.

This experiment was carried out under the direction of Dr. C. M. Winget, Poultry Science Department, Ontario Agricultural College, Guelph, Ontario. Fourteen pens with twenty-five females and three males each were used. The females used had been in lay for approximately nine months previous. A breeding ration was used and after a month, two hatches of a week's eggs from each pen were set and hatched.

At the end of one month, the following treatment was used. Pen No. 1 was used as a control pen. Pens No. 2 to No. 8 received injections of Nilevar at various levels. Pens No. 9 to No. 14 received various levels of Nilevar in the feed. Eggs were set each day from each pen for approximately two months. Fertility, number of dead germs, and sex of chickens was determined on each pen for this length of time. The results are being analyzed and will be published by Dr. Winget.

Observations to date would appear that low levels of Nilevar in injections or in feed are beneficial from a production standpoint.

A comparison on the cost of producing eggs from hens in their second year of production as compared to pullets.

This test was set up using three hundred old hens as compared to three hundred pullets. The pullets had been in lay three months so that egg size was mainly large. Results to date would show that feed cost per dozen eggs in a three month period to be about eight cents per dozen less on pullets than on old hens.

A second test comparing feed cost per dozen eggs on Leghorns as compared to Rhode Island Reds with a difference in body weight of the two breeds of 1½ lbs. per bird.

Results to date are 4.1 lbs. of feed per dozen eggs on Leghorns as compared to 5.2 lbs. of feed per dozen eggs on Rhode Island Reds.

Both of these tests provide excellent material for our students on feed conversion work.

Extension

An Annual Poultry Field Day for Eastern Ontario is held each year at the Kemptville Agricultural School. This event was held on July 4th, 1962, with approximately 150 persons attending.

Chicken barbecues are very much in favour in Eastern Ontario and several are held at the K.A.S. each year.

Twelve evenings were spent with 4-H Poultry Clubs either in meetings or Field Day Achievements.

Practical demonstrations were given in debeaking, dewinging, and caponizing. The debeaker was on loan to over seventy-five poultry farms during the year.

Twenty-five visits were made to poultry farms regarding management, feeding and housing.

The banding and blood testing of turkeys in Eastern Ontario was done by this Division last fall.

Over 5,000 birds were killed and processed at the K.A.S. last year. The Division does practically all its own hatching with the exception of turkeys which are purchased.

Excellent co-operation has been received from the Regional Veterinary Laboratory in regards to poultry diseases; also, from the Agricultural Mechanics division in regards to buildings and ventilation.

REGIONAL VETERINARY LABORATORY

While the Regional Veterinary Diagnostic Laboratory is a branch of the Ontario Veterinary College, its situation on the K.A.S. campus allows for integration of its services with those of K.A.S. and for close co-operation between these two units.

The Regional Veterinarians are responsible for veterinary services required by the Kemptville Agricultural School cattle herd, swine herd and sheep flock. Also they assume the responsibility for veterinary supervision of animals maintained on the campus undergoing observation under the Advanced Registry Test Policy for registered beef bulls. Complete veterinary service is also provided for the Industrial Farm located at Burritt's Rapids.

The Veterinarians assume responsibility for teaching K.A.S. agricultural students a course in bacteriology and animal health. A course in bacteriology is provided for girls enrolled in the Home Economics course.

Diagnostic and laboratory services offered by the Veterinary Laboratory resulted this year in the examination of 3,908 carcasses or specimens of various species of animals, the testing of 12,656 milk samples for detection of mastitis, and over 15,500 various chemical or biological examinations of specimens for detection of causative agents of disease.

The Veterinarians arrange numerous short courses, and assist at many meetings of farm groups.

Some research is still being conducted by the Veterinary Laboratory into the cause of copper deficiency in cattle in Eastern Ontario, and into the mode of inheritance of congenital ichthyosis which has been observed in this area affecting a number of cattle.

Western Ontario Agricultural School and Experimental Farm

In 1962-63, the Western Ontario Agricultural School and Experimental Farm had its most active year in the history of the institution, experiencing more research, more visitors, more demands on the staff, and having the largest Senior Year.

The pattern of the program is directed into two main channels:—

- (a) Research particularly applicable to the Southwestern Ontario conditions and also giving close scrutiny to the desirable and advisable trends as might affect the future of Agriculture in Ontario.
- (b) Dissemination of Information Greater emphasis is placed on teaching and teaching methods as may apply to both the students and meetings on and off the campus. There is an increasing demand for staff members to participate in Agricultural meetings in a greater area of Southwestern Ontario.

The above two programs, namely, Research and Dissemination of Information (Extension), are taxing the staff to the limit.

School -

168 students, all from Ontario, registered for the Diploma Course —

79 for the Junior Year; average age 19.0

89 for the Senior Year; average age 19.6.

The decrease in the Junior Year enrollment is significant.

- (1) Minimum age for entrance was raised from 17 to 18 years.
- (2) Because of the larger Senior Year, residence accommodation was limited to 80 in the Junior Year.

Prospective students are encouraged to remain in High School until receiving at least a graduation diploma (Grade XII); $65\,\%$ of the current body having attained that objective.

ACADEMIC FUNCTIONS

Graduation

On Tuesday, May 15, 1962, the Annual Graduation Exercises were held in the Livestock Building with the Hon. Wm. A. Stewart, Minister of Agriculture, delivering the address; Mr. E. M. Biggs, Deputy Minister, assisted in Graduation by presenting diplomas to the graduates.

Baccalaureate Service

On Sunday, March 17, 1963, the Annual Baccalaureate Service for the graduating class was held in the Auditorium. The address was delivered by Reverend Dr. W. A. Young, Federated Colleges.

Remembrance Day Service

The Annual Remembrance Day Service was held on November 9 (Friday) in the Auditorium, with full attendance of students and staff. The service was conducted in its entirety by members of the staff who served in the armed forces.

Student Activities

In order for the students to receive a broad education it is imperative that they participate in extra-curricular activities which provide experience in organization and responsibility. The following are student organizations:—

- (1) Student Council assisting in general organization, discipline and social functions.
- (2) Literary Society sponsors Public Speaking, skits, etc.
- (3) Athletic Society organizes and administers sports program in co-operation with Supervisor of Athletics.
- (4) Glee Club voice training and recreation singing.

Service Activities — (Extension)

Services supplied by personnel provides the important link between research and the farming public. Research conducted at the school is of a practical nature, the results of which have a direct bearing on the farm.

This service is divided into two main categories:—

- 1. Direct contact with a farmer either on or off the campus, usually on the campus.
- 2. Contact with the public via organized meetings and tours. Again, this is accomplished through on and off the campus meetings. Most of the off campus meetings are arranged by the extension personnel.

Approximately 9,000 people visited the school in 1962-63. The visiting groups may be classified as follows:

- (a) General e.g. County Soil and Crop Associations; Regional Livestock Groups; County Federations of Agriculture; Junior Farmer Organizations; Farmers' Week 3400; W.O.A.S. Review 1700; 5 County Trustees and Ratepayers and Agricultural Groups from U.S.A. New York, Wisconsin, Illinois.
- (b) Special e.g. Spray Day; White Bean School and Tour; Tobacco Field Day; Wheat Conference; Fertilizer Advisory Board; Ontario Corn Committee; Sugar Beet Fieldman; Veterinary Conference; Bankers' School; Building Contractors' School; S.W.O. Swine Conference; Farm Drainage School and A.I.C. and Grade 13 Students.

Research

Research is demanding a major portion of the time of the staff who are playing a greater role in the Provincial Agricultural Research Program.

The general theme of the Research Program is to evaluate new recommendations and farm practices in an attempt to achieve maximum production at the least possible cost. This involves research in crop evaluation and cultural practices, soil fertility, pesticides, harvesting, storing, feed evaluation, feed conversions, carcass evaluation and farm business.

Demonstration Farm - New Lisheard

The Ontario Demonstration Farm, New Liskeard, continued to serve North-Eastern Ontario Agriculture by providing certain demonstrations and experiments to meet problems peculiar to the area. In addition, specialized Extension Services were provided to other Departmental personnel, farmers and farm organizations, particularly in animal and field husbandry projects.

Facilities provided by the Demonstration Farm and Regional Services Building were extensively used by Agricultural organizations and farmers, with a noted increased demand for information pertaining to agriculture carried on in North-Eastern Ontario.

The number of Agricultural and non Agricultural groups and individuals visiting the unit this past year showed a 30% increase; significant was the number of tourists and farmers from other parts of the Province who called at the unit for farm tours and other information pertaining to North-Eastern Ontario Agriculture.

Some of the larger groups visiting the unit were: Two groups of the Ville Marie Agricultural School students; Ontario Hydro sponsored Ontario Electrical Manufacturers Group; Ontario Farm Machinery Committee; Holstein Twilight Meeting; Sheep Breeders' Field Day; Temiskaming 4-H and Junior Farmers Judging Competition; Canadian Farm Loan Board Meeting; Provincial Junior Farmer Directors; Local Producers Co-operatives; Departments of Agriculture and Forestry Communication Course; some 500 Primary School students; North-Eastern Quebec 4-H Club members tour; North-Eastern Ontario 4-H Livestock Judging Competions, Agricultural Representatives Regional Conference; Ontario Hydro Research Electrification Course, North-Eastern Ontario Fluid Milk Shippers and the Weed Spray School.

Unit Services have also been used extensively by Ontario Department of Highways; Civil Service Association; Agricultural Societies; Women's Institutes; Crop Improvement Association; Farm Welding Short Course and many other Agricultural and urban groups interested in Agriculture.

Extension Activities

During 1962, there was a considerable increase in the number of requests received from agricultural and urban groups, Agricultural Societies and Breed Organizations and Agricultural Extension Branch personnel for assistance in their various meetings and programs.

The farm continued to give assistance to Beef Producers in the New Liskeard-Matheson-Cochrane Districts, particularly in the purchase and selection of breeding stock.

Farm Welding Course

Two Welding Short Courses were held at the unit during March, 1962 at which time 30 farmers from the Temiskaming District participated. This course covered a period of three - half day periods. The first afternoon was given to a lecture on equipment and safety precautions to be taken. The remaining two afternoons were used to practice welding. These two courses were given by the Agricultural Engineer, and the Journeyman Mechanic of the Demonstration Farm, who is a licensed welder with many years practical experience.

Electrification Course

A series of six evening meetings were held in co-operation with Ontario Hydro during February and March 1962. This course was also appreciated by area farmers with an average attendance of 60 farmers per evening.

Appreciation is extended to Ontario Hydro Personnel for the preparation and delivering of this series of lectures and demonstrations.

Exhibit Services

During 1962, it was possible to enlarge the exhibit service which was set up two years ago. Through this medium, exhibits have been made up on Unit Experimental Data and other material as requested by other Department personnel.

A portable exhibit was made up and shown at local and district Fall Fairs in 1962, on the various services provided by the Department of Agriculture in the District.

Additional exhibits were presented at Seed Fairs, Crop Improvement meetings and Live Stock Meetings.

Weed Spray School

The 3rd Weed Spray School was held at this unit, for farmers and weed inspectors in 1962. Instructions and Demonstrations were well received and the interest in weed spraying has greatly increased throughout the District this past 3 years.

This program was organized co-operatively by the Soils and Crops Branch, Agricultural Extension Personnel, and the Demonstration Farm staff.

Animal Husbandry

Livestock maintained on the farm consists of registered Hereford Cattle; Yorkshire hogs and North Country Cheviot Ewes. The livestock is maintained to provide area farmers with practical information on various aspects of livestock management and also to provide livestock classes for Judging Competitions, Demonstrations, etc., held in conjunction with Livestock Field Days, plus their utilization in our Field Husbandry projects. Additional use is made of the livestock in the procurement of progeny testing data, feeding trials, maintenance costs, housing and ventilation, and other information pertinent to livestock production in North-Eastern Ontario.

Beef Cattle

The present herd consists of 5 bulls — 78 cows — 71 heifers — 25 calves and 44 steers.

Progeny records are maintained on the cow herd. This is achieved through the use of the Plan "B" Herd Test as recommended by the Advanced Registry Rating for Beef Cattle.

Sixty-two of the beef cows which freshened in the Spring of 1962 were again placed on Plan "B" Herd Test to evaluate the performance of the cow herd. All weaning weights were corrected to a 205 day weaning weight with necessary corrective factors for age.

The following results are expressed as the number of cows who produced calves with weaning weights in the respective weight groupings.

1962 Results
No. of Cows Over 500 Lbs. 450-500 Lbs. 400-450 Lbs. 400 & Under
62 10 21 18 13

No supplemental or creep feeding was practiced for calves during the grazing period.

Comparative Wintering Conditions

Object: To determine the feasibility of wintering Beef Cows outside using only evergreen wood lot for shelter as compared to Beef Cows wintered under loose-housing conditions in North-Eastern Ontario.

Ration: Full access to hay.

Average hay consumption per animal per day—23 lbs.

Mineral—Free Choice.

Plus — 45 gals. H₂O daily for 10 head.

Outdoor Conditions — Hay Only — Limited water.

No. of Animals Length of Av. Wt. Begin- Av. Wt. Av. Gain
Period ning of Test Off Test per Day
10 81 Days 1134 1140 0.07

Loose Housing — Ration: Hay plus Silage — Water Free Choice.

No. of Animals Length of Av. Wt. On Av. Wt. Av. Gain
Period Test Off Test per Day
10 81 Days 1055 1155 1.2

Conclusion:

Both groups of beef cows wintered exceedingly well. No difficulties were experienced with either group. However, the group wintered under conventional loose-housing conditions gained an average of 100 lbs. during the test period as compared to the group under outside conditions who only gained an average of 6 lbs. during the equivalent period of time.

The Test Period was concluded when the outdoor group was due to freshen. Both groups of cows freshened normally with no difficulties.

Birth weights of calves and general thriftiness were equal.

Calf weaning weights on both groups have been kept for the past two years. 1963 Weaning Weights will be compared to determine if any difference exists between both groups of cows as to weaning weights of calves.

Feeding Trial Experiments

Six groups of Beef heifers were placed on five different rations, to determine the most economical maintenance ration, on which to winter heifer calves, utilizing for the greater part, forages and oats, the two crops which predominate in North-Eastern Ontario.

The daily feed requirements per animal were pre-set so that animals would make one-half to three-quarters pound gain during the winter feeding period — all animals used, to be placed on grass for the 1963 grazing period, and weights

and gains to be recorded during this period — completion of this test to be at the conclusion of 1963 grazing period.

Feed Values Hay \$16.00 per ton — Silage \$5.33 per ton Oats \$2.00 per cwt. — Concentrate \$5.30 per cwt.
RationsBased on 24 hour period per animal
Group No. 1Hay — 8 pounds plus 6 pounds silage
Group No. 2Hay — 3 pounds plus 20 pounds silage
Group 3A
Group 3B
Group 4

79 Day Report

Group	No. Animals on Test	No. Days on Test	Av. Wt. on Test	Av. Wt. Off Test	Av. Daily Gain	Cost per lb. Gain
1	8	79	499	554	0.7	11.5ϕ
2	8	79	491	535	0.6	13.9¢
3A	6	79	420	498	1.0	11.5¢
3B	6	79	458	516	0.7	15.3¢
4	5	79	452	512	0.8	18.5¢
5	5	79	441	518	1.0	9.6¢

Group 5Hay — 12 pounds

Conclusion

The above 79 Day Feeding Trial report and the results obtained, indicate the necessity for the duplicating of a similar feeding trial again in the winter of 1963.

Breeding Stock Sale

Twenty beef heifers were sold by auction to farmers on December 15th, 1962. Eleven of these heifers were bred, to freshen in June 1963 — with remaining heifers being sold open. Prices received were that of corresponding prices being paid for comparable heifers at the Toronto Stockyards.

Swine

The Swine Herd consists of 6 sows — 1 boar. All sows are of Canadian Yorkshire breeding.

Some 65% of all progeny are sold to farmers in North-Eastern Ontario as breeding stock.

Due to the demand for breeding stock this herd has not been utilized for experimental purposes.

The grading percentage of the hogs marketed during 1962 was 82% Grade "A" and 18% Grade "B".

Sheep

The present flock consists of twenty-eight Registered North Country ewes and thirty-four Crossbred Leicester x N.C. Cheviot ewes.

Twenty-eight ewes are used in the production of registered breeding stock while thirty-four cross-bred ewes were mated to a Hampshire ram. This cross-breeding experiment was devised to evaluate the crosses used, and the possibility of the development of a cross-bred ewe which would meet the requirements of commercial flock owners.

Progeny records have been maintained on all breeding ewes for the past three years.

Sheep Breeders Day

Some 75 sheep breeders and members of the Temiskaming 4-H Sheep Club attended a one day meeting on Sheep Husbandry. Topics discussed were: Management, Clipping and Dipping and Parasite Control. Members of the Live Stock Branch, Regional Veterinary Laboratory and Demonstration Farm staff, participated in the days program.

Poultry

The poultry flock consists of 800 Leghorn hens — this being the number placed in the hen house in 1962.

These pullets were obtained from the Kemptville Agricultural School at 8 weeks of age and range grown on a restricted feeding program until placed in the laying pens.

The flock is maintained to provide poultry producers in the area with information on Feeding, Housing, with particular emphasis on ventilation packaging and grading procedure, and other phases of poultry management.

Several demonstrations were given in debeaking poultry with the Debeaker being loaned to some thirty-five poultry producers and farmers during the year.

Livestock Housing

The clear span 100 x 40 beef barn built in 1959 continues to function in a satisfactory manner. The barn was built with a closed front with two doors which can be closed if necessary during calving periods.

Other buildings function relatively well with the exception of the main beef barn in which the ventilation is particularly poor. Several attempts by the Agricultural Engineers to rectify this situation have proven unsatisfactory.

Ventilation problems throughout the entire area continue to be one of the major problems encountered by farmers during the winter housing period.

Field Husbandry

The 1962 growing season, due to lack of rainfall, was entirely different from the growing seasons normally encountered in this particular district.

Lack of rainfall had a detrimental effect on pasture production and yields of forages. However, this provided excellent haying conditions, with the highest quality hay being harvested. Protein analysis on hay at this unit having a protein content of 15.5%.

Yields of cereals were good, with oats and barley having a 10 bushel per acre increased yield over 1961.

Spring seeding operations commenced May 16th and were completed on May 23rd, 1962. Both oats and barley were straight combined with the barley being combined on August 31st and September 1st. Similar operations for oats commenced on September 14th.

Experimental data on cereal grains, forages and soup peas, were conducted and maintained by unit staff, in co-operation with the Field Husbandry Department of the O. A. C.

Additional information on varieties, fertilizer tests and cultural methods are obtained through field trials in the regular unit program.

An additional 75 acres was leased in the immediate area of the Demonstration Farm to provide additional acreage for forages and pasture requirements.

1962 - Forage and Cereal Acreages

Oats	60	Acres
Barley	16	Acres
Hay and Silage	140	Acres
Pasture	135	Acres

Unit Fields of Cereals

Garry Oats	72	bus.	per	acre
Russell Oats	70	bus.	per	acre
Shield	45	bus.	per	acre
York Barley	48	bus.	per	acre
Nord	52	bus.	per	acre

The main varieties of oats grown in the District are Garry and a small percentage of Russell and Shield Oats.

The early variety, Shield, has not been accepted by farmers in general; mainly due to lower yield and quality as compared to Garry.

Project "A"

In 1961 four eight-acre plots were seeded to simplified mixtures to compare the Vernal Alfalfa as to the variety Rhizoma and to determine the value of Orchard grass under local conditions. These four plots had an exceedingly light yield of .75 tons per acre as compared to the standard Hay-Pasture mixture which has been used this past four years which provided yields from 1.5 to 1.75 tons per acre.

Project "B"

Birdsfoot Trefoil

Three two-acre plots of Roskilde, Empire and Viking Birdsfoot Trefoil was seeded in the Spring of 1960. Visual appraisal of the three varieties which were pastured this past two years indicated that Empire proved the most satisfactory as to plant sand and regrowth of aftermath, and while this particular variety appeared some 7 days later than Viking, its general productivity off-set the earliness of the variety Viking.

Project "C"

Pasture (Nitrogen Application Test)

This project was started in the Spring of 1960 to determine the value of nitrogen on pasture; as such, one 10 acre field was divided into two 5-acre plots. Plot "A" receiving a 150 lb. (45% Urea) application as compared to Plot "B" which received similar management practices other than no nitrogen application.

Beef heifers were weighed on and off pasture and the numbers placed on the respective plots was determined by the production of each plot. Three-year summarized results are as follows. As results for this period of time are conclusive, this project will not be carried on during 1963.

Plot No. 1 —5 Acres — NO NITROGEN TREATMENT

Length pastu period day:		Value Silage at \$1.65	Lbs, beef produced per plot	Value beef per plot at .20c lb.	Total Production per 5 Acre Plot	Total Production per Acre
1960 125	19.5	\$32.18	1525	305.00	337.18	67.44
1961 107	8	13.20	1119	223.80	237.00	47.40
1962 109	Nil	Nil	1275	255.00	255.00	51.00
PLOT No. 2 1962	5 Acres	- 510 lbs.	Aero Urea	per acre in !	Spring of	
1960 125	29.25	48.26	1697	339.40	387.66	77.53
1961 107	13.5	22.28	1505	301.00	323.28	64.66
1962 117	Nil	Nil	1655	331.00	331.00	66.20
Aero Urea Va	lue \$120.00 p	er Ton				
						3 Year
Value of inc	creased produ	action 1	.960	1961	1962	Average
due to ferti	lization per ac	re 1	0.09	17.26	15.20	14.84
Cost of Nitro	gen per acre		9.00	9.00	9.00	9.00
Returns per	fertilizer dolla	ar	1.12	1.92	1.69	1.58

Tile Drainage

An additional 40 acres of poorly drained land was tile drained in October 1962 — giving a total area of 90 acres tile drained on the unit. Land which had been drained previously, continues to function satisfactorily allowing spring seeding and harvesting operations to be completed two weeks earlier than had been possible prior to the installation of the tile. Two other farmers in the district installed a small acreage of tile drainage in 1962.

Tile Drainage projects continue to be of interest to farmers in the district.

Of interest in 1962 was the hay crop on a forty acre field which yielded two and one quarter tons of hay per acre; this representing a one half-ton increase over yields obtained on the untiled hay fields which were seeded in the same year to a similar mixture.

As stated previously, 1962 was an abnormal year in the District due to low rainfall, hence forage yields were considerably less throughout the entire district.

Strathclair Farm - Sault Ste. Marie

Strathclair Farm is a Demonstration Farm situated on the north-eastern fringe of the City of Sault Ste. Marie, in the Township of Tarentorus. This Farm consists of approximately 300 acres, and is operated by the Ontario Department of Agriculture in the interest of education and research. General farming operations have been carried on to maintain and develop a beef herd of Hereford cattle, in addition to these operations various trials have been conducted with cereals, grasses, and legumes.

The land on this Farm is very flat with the exception of 40 acres of rolling pasture. The flat land presents a problem at various times during the year with the accumulation of surface water. The soil is of a sandy loam nature with approximately 13 acres of clay loam around the buildings. This soil with adequate fertilization is very productive in the growing of forage crops.

Extension

The Algoma Junior Farmers held their Annual Judging Competition on July 6th, with 50 contestants competing. Classes were conducted on beef cattle, dairy cattle, potato and grain. The classes of beef cattle were chosen from the Farm herd and afforded some excellent instruction to the 4-H Beef Calf Club Members. Parents accompanying the 4-H Club Members, avail themselves of the opportunity to inspect the crops being grown and inquire about the various farm practices used.

School children from nearby schools arranged for conducted tours of the Farm as part of their agricultural curriculum.

Seeding

Seeding operations started May 10, with good seeding weather prevailing. One twenty acre field was sown to Garry oats and seeded down to Timothy, Red Clover and Alsike. This field was fertilized with 4-24-12 at the rate of 200 pounds per acre

An eighteen acre field was sown to peas and oats at the ratio of 3 bushels of oats to 1 bushel of peas. This field received 5-20-10 fertilizer at the rate of 200 pounds to the acre. This eighteen acre field was harvested as ensilage.

Silage

There are two silos on Strathclair Farm, a horizontal silo and a tower silo. The horizontal silo was filled with a mixture of Reed Canary Grass, Red Clover and Timothy from a 30 acre field. There was good quality silage with freezing at a minimum.

The tower silo was filled from the eighteen acre field of oats and peas. This silo produced good feed during the winter months.

Haying

Haying commenced on July 2nd, and was completed on July 28th. Excellent weather prevailed for curing hay and there was a heavy hay crop. A large volume of top quality hay was harvested with an average yield of 2 tons per acre. There was more than an adequate volume of hay stored for winter requirements.

Harvesting

The grain that was not put into the silo was baled and harvested as green feed. This made excellent beef cattle feed and was harvested in this manner due to the large volume of surplus grain on hand.

Pastures

The pasture fields were fertilized in the early Spring with 33% Ammonium Nitrate and 4-24-12 to produce extra Spring growth and continued growth throughout the summer.

Weed control was maintained on the pastures through the application of herbicides to control mainly buttercups and daisies.

Rotational grazing was practiced throughout the summer.

Drainage

Drainage presents a real problem on Strathclair Farm as is the case throughout the whole District of Algoma. The flat land with the resulting accumulation of surface water especially during wet seasons presents a difficult problem. Open ditches have made a real contribution in disposing of the surface water. Last year the ditches were cleared of all trash and weeds, thus making them more effective.

Livestock

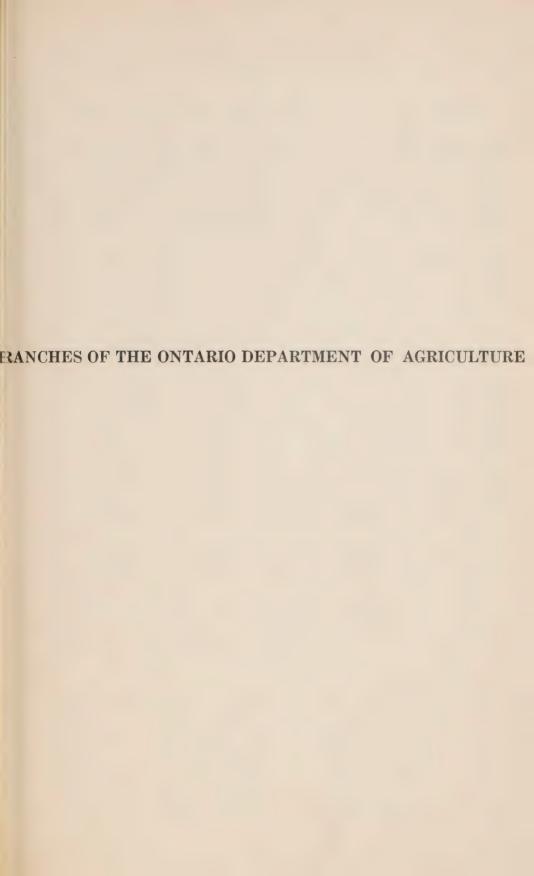
The Strathclair herd was dispersed by public auction at Sault Ste. Marie, on January 30th, 1963. Seventy seven head of Hereford cattle were sold for a total of \$19,717.50. All the cattle except nine head were purchased by farmers resident in Algoma District.

Included in the offering were twenty-five grade cattle which were brought down from the New Liskeard Farm. Previous to the sale, these were exchanged for the same number of Strathclair purebreds.

In October, ten heifers were transferred to the Ontario Agricultural College, Guelph, and were used for judging classes. Five of these were bred and five were open. Also one sire which had been on loan from the College to Strathclair Farm was returned.

There were three sires included in the inventory of this Farm. One had to be culled last Fall because of a spine injury. The second was on loan to the Western Ontario Agricultural School, Ridgetown, and later was transferred. The third was a junior bull and was sold to an Algoma farmer.

The 1962 calves were distributed between the Ontario Agricultural College and the New Liskeard Demonstration Farm. Seventeen steer and four bull calves are presently on feeding tests at the College. Thirty-one heifers were wintered at New Liskeard.





Agricultural and Horticultural Societies Branch

Fairs and Exhibitions held in Ontario in 1962 were, on the whole, quite successful. In many instances attendance records were established. For the first time in its 84 years of operation the Canadian National Exhibition was able to report the number of visitors entering the gates exceeded 3 million. Special recognition was given by the C.N.E. officials to the young girl identified as the three millionth person visiting the show. The attendance at the C.C.E. (Ottawa) was also the highest of any year since the show was established.

While the success of a fair cannot be measured entirely on the basis of gate receipts, nevertheless it is a yardstick employed by most organizations and any increase or decrease usually reflects the degree of public acceptance of the program.

The following fairs have also reported a substantial increase in gate receipts over 1961: Aylmer, Beachburg, Beamsville, Belleville, Binbrook, Brampton, Burford, Campbellford, Canadian Lakehead, Caledon, Cookstown, Elmira, Dresden, Dundalk, Kincardine, Kingston, Lansdowne, Murillo, New Liskeard, Orono, Paris, Perth, Peterborough, Port Perry, Port Hope, Renfrew, Ridgetown, Russell, Smithville, Spencerville, Sutton, Thessalon, Welland, Woodbridge and Woodstock.

Weather conditions were unfavourable for at least 15 percent of the fairs. Thirty-eight, compared with twelve in 1961, experienced a reduction in gate receipts ranging from slight to almost total loss as a result of rain fall on fair day.

The number of active societies stands at 251. All but ten of these held a fair in 1962. Those not sponsoring a fair carry on field crop competitions, 4H Club projects, plowing matches, livestock projects, etc.

All Societies are classified under the Agricultural Societies Act but the term Fair rather than Society is more common when referring to classification. Congratulations are extended to Ilderton, Navan and Hanover Fairs in being elevated to B Class as of April 1st, 1962. There are now 8 A Fairs, 45 B Fairs and 188 C Fairs.

The majority of Fairs kept their admission rate for adults at 50 cents, however, most of the larger Fairs have moved to 75 cents and a few to \$1.00. In return for this increase admission charges to grandstand, in some instances, have been eliminated.

Rockton again led the list of one day fairs for attendance. Receipts at 50c for adults, with bleacher seats free, amounted to \$6,218.44.

The following table shows fairs with highest receipts in each of the three classes.

A FAI	RS	B FA	IRS	C FAIR	S
Toronto		Lakehead	. \$65,121	New Liskeard	\$6,503
(C.N.E.) \$	1,058,412	Kingston	21,776	Tillsonburg	5,386
Ottawa		Belleville	17,402	Perth	4,864
(C.C.E.)	171,927	Renfrew	14,824	Burford	3,744
London	126,986	Elmira	11,118	Murillo	3,500
Lindsay	29,007	Woodstock	10,452	Port Perry	3,358
Peterborough	28,074	Norwood	7,880	Madoc	3,205
Simcoe	23,620	Paris	7,806	Orono	3,085
Welland	16,661	Erin	7,011	Delta	3,046
Galt	8,214	Woodbridge	6,864	Kinmount	2,976

Anniversary

The St. Lawrence Valley Agricultural Society, sponsors of the Williamstown Fair, celebrated its 150th Anniversary. Their special guests for the occasion were the Hon. J. Keiller McKay, Lieutenant Governor and Mrs. McKay.

A new stone gateway was erected to mark the occasion and the plaques on the main pillars were unveiled by the Honourable Wm. A. Stewart, Minister of Agriculture. The Ontario Association of Agricultural Societies was represented by President James Mair, Vice Presidents Wm. Hodgins and Arthur Rowan, Treasurer Milton Cochran and your secretary. This was the first time the entire Association executive had attended a fair together.

The program included a large parade of floats, the majority of which depicted the vast changes in Agriculture and rural living that have taken place during the past century and a half.

Women's Activities

The work of women in fair activities is outstanding. In many instances the home department of fairs is the big feature as far as exhibits, displays and demonstrations are concerned. Thirty-two percent of the Agricultural Society secretaries are women. Every fair has a Women's Committee whose members are associate directors. In some instances women are being elected to the Board of Directors and Executive offices.

4H Agricultural and Home Making Clubs

Fair Boards, as usual, co-operated fully with Agricultural Representatives and Home Economists and Junior Leaders in carrying out Ontario's 4H Club program. The Agricultural Societies provided a portion of the prize money and all the necessary facilities for staging exhibits belonging to 4H Club members. The Extension Branch reports there were 764 Agricultural 4H Clubs organized with a membership of 13,062 and 1,840 4H Home Making Clubs with a membership of 17,606. This is a substantial increase over 1961.

It is estimated that close to 60% of the Agricultural 4H Clubs are sponsored by Agricultural Societies.

Other important features connected with Junior Work at fairs were the displays and competitions by 4H Clubs and the great array of exhibits and displays entered by primary and secondary schools. In regard to the latter much credit is due principals, teachers, inspectors and school boards for their support and co-operation.

Breed Shows

Fair Boards co-operated with pure-bred livestock organization by supporting 114 County or Regional shows and 6 Championship Shows were held in conjunction with Fairs. A total of 2,016 animals were shown.

Commercial Features

A total of 108 Societies sponsored 174 displays of commercial products. Practically all products of a commercial nature and common to rural Ontario were represented.

Field Crop Competitions

A total of 280 competitions were held with 4,024 competitors. There were 140 competitions in Oats; 73 in Corn; 17 in Pasture and 16 in Hay.

Ripley, a C Fair, again led the list with 9 competitions and 137 members. Paris had 6 competitions with 121 members; Caledonia 4 competitions with 88 members.

A substantial increase both in number of competitions and membership as compared with other years was noted.

Improvements to Grounds and Buildings

Excellent progress was made during the year on the matter of improvements to property in which capital grants under the Agricultural Societies are available.

Many new structures were erected, also extensions made to present buildings. These included: Junior Fair Buildings; Ticket Booths; General Exhibit Buildings and Rest Rooms.

Glencoe winterized their new exhibits building erected a year ago and are using it for community activities, banquets etc.

Caledonia built a new grandstand with seating for 1,260 people, also put a cement floor in their main agricultural building.

Kinmount erected a new exhibits and community building and had it ready for the 1962 Fair.

Western Fair, London, built a new addition to the grandstand, put stalls in horse barns and a new roof on the sheep and swine building, also did considerable paving.

Russell, Thessalon and Napanee, with the help of curling clubs, each have a new agricultural and rink building on the fairgrounds.

Much hydro extension and painting of buildings, also fences, was carried out by a number of Fairs.

Hanover, which acquired B status during the year, has made a start on a \$200,000.00 building project. Markham is also engaged in a building programme estimated to cost \$150,000.00.

The Canadian National Exhibition enjoyed the use of Better Living Centre. It replaced the old Manufacturers Building destroyed by fire two years ago. It was officially opened during the exhibition by Mayor Nathan Philips.

The C.C.E., Ottawa, made improvements to their property including major repairs at a cost of \$40,750.00.

Canada Packers Special

Some 230 Fairs took advantage of special prizes offered by this firm for pies and cakes using domestic shortening. The same policy will be in effect for 1963.

SEED AND SHEAF COMPETITION — C.N.E.

Class 338 — Grain and Seeds — Division 1 — 3 entries

1st Armour, Ryerson & Burks Falls Agricultural Society — Burks Falls.

2nd Magnetawan Agricultural Society - Magnetawan.

3rd North Muskoka Agricultural Society - Huntsville.

Class 338 — Grain and Seeds — Division 2 — 7 entries

1st Carrick Agricultural Society - Mildmay.

2nd South Renfrew Agricultural Society - Renfrew.

3rd South Lanark Agricultural Society - Perth.

Class 339 — Sheaf Groups — 6 entries

1st Carrick Agricultural Society - Mildmay.

2nd Huron Township Agricultural Society - Ripley.

3rd Armour, Ryerson and Burks Falls Agricultural Society — Burks Falls.

Government Grants — Prize Money

By an amendment to the Agricultural Societies Act made during the 1962 session of the House, Agricultural Societies receive their grants on a stated basis, namely one-third. Formerly the factor or percentage was determined after the total expenditures on prizes for all societies were tabulated. The amendment permits apportioning of the grants as returns are received and checked.

A total of 56 Societies earned the maximum of \$1,500.00 and 9 of these were Clace C Fairs.

One hundred and twenty-one Fairs held harness racing. The amount paid in prizes for racing was \$61,274.39

Summary of Prize Money Awarded — 1961

Canadian National Exhibition, Toronto Central Canada Exhibition, Ottawa Western Fair, London All Other Fairs	\$ 118,350.50 51,118.35 47,528.48 716,173.49
	\$ 933,170.82

Summary of Other Grants

Northern Ontario (Special)	47
Field Crop Competitions	280
Commercial Feature Displays	174
Wet Weather	38
Centenary	1

Statistics — 1961 Reports

Expenditures for Agriculture (prizes)	\$ 933,170.82
Gate Receipts	\$ 1,816,060.51
Municipal and County Grants	\$ 157,303.53
Legislative Grants (1962)	\$ 217,124.41
(paid on prize money including	

ASSOCIATION ACTIVITIES

races average 1959, 1960 1961).

Very successful meetings were held in each of the 16 districts in the province. These permit discussion of local or area problems connected with fairs, including arrangement of satisfactory dates.

Districts 5 and 10 each award a challenge trophy to the society with the highest attendance multiplied by the mileage.

The Agricultural Societies Branch was represented at practically all district meetings. Agricultural Extension workers and Home Economists of the Department of Agriculture helped with the programs.

Board Meetings

Directors elected in their respective districts become members of the Ontario Association of Agricultural Societies Board. Their duties commence at the close of the annual convention. Four meetings were held during the year, two of which took place at convention time.

The A and B and Women's Sections are represented on the Board. They meet on their own during the convention for election of officers and for the conducting of business.

An amendment to the Constitution adopted at the 1962 convention gave the women the necessary authority to carry on as a section of the O.A.A.S.

Convention

A total of 510 women and 535 men attended the annual convention held in the King Edward-Sheraton Hotel, Toronto, in February. Panel discussions and addresses by well qualified speakers contributed much to the success of the event. The displays of handicrafts and fair pictures were well received.

Essay Competition

The Ethel Brant Monture Essay Competition was again sponsored by the Women's Section but under a different topic, namely "The School Program At Our Fair." Pupils in grades one to eight were eligible and each district was required to submit their best entry for provincial competition. All but one of the 16 districts carried through. Judging of the essays was done by Mrs. Monture.

The winner in the provincial competition was Lora Pitt of Spencerville.

Coloured Photographic Competition

For the seventh year the Canadian National Exhibition has supported this competition by providing a very substantial list of cash prizes. While entries are not as great as they should be, those societies participating get much value in publicity and in arousing interest among their own members in improving grounds and buildings.

Class 1 — Open to Class A & B Fairs

14 Societies submitted 92 slides Championship — Ridgetown Reserve — Brigden

Class 2 — Open to Class C Fairs

20 Societies submitted 105 slides Championship — Tie — Bobcaygeon and Milverton

Junior Championship Class — C.N.E. Shield — Hagersville Dairy Calf Club — slide submitted by Caledonia Agricultural Society.

Service Diplomas

The O.A.A.S. provides engrossed diplomas to societies for presentation to citizens who have made a worthwhile contribution in the field of services to Agriculture. The person selected for the award must have been approved by the board of directors of the society. During the year 93 of the 241 societies holding fairs applied for and received diplomas.

Insurance

A total of 136 Agricultural Societies took advantage of the group policy covering public liability and property damage. Claims were few and all were satisfactorily dealt with.

Canadian Fairs Association

The O.A.A.S. is a member and the annual meeting and two day convention was held in Toronto following the Royal Winter Fair. Problems relating to the larger shows and exhibitions in Canada were reviewed. The exchange of ideas is proving helpful to all delegates.

International Association

Ontario was well represented at the annual convention of the International Association held in Chicago. Officers of the C.N.E., C.C.E. and Western Fair were contributors to the program. Jack Clarke, Manager of the C.C.E., Ottawa, is a zone chairman.

Agricultural Hall of Fame Association

The O.A.A.S. is a member of the organization and nominated the late Walter Jackson for recognition. His portrait, along with several others prominent in Agriculture, was unveiled at a special ceremony held at the time of the Royal Winter Fair. Mr. Jackson was, for many years, Manager of Western Fair, London, and served a term as president of the International Associations of Fairs and Exhibitions.

Plowing Matches

Plowing Match activity in Ontario during 1962 was marked with considerable success. Interest in this type of competition varies throughout the province. Several counties do not hold a match while others may have one or more. For example, Waterloo sponsors five matches. Algoma has four, also a district match.

	MATCHES				ENTRI	ES	
()	1960	1961	1962		1960	1961	1962
Senior	66	64	63	Tractors	1,471	1,610	1,964
Junior	17	10	15	Horses	240	188	136
Coaching Days	s 13	9	12				-
District Match	es 2	2	2		1,711	1,798	2,100

Under total entries an increase of 302 over 1961 is noted. As expected there was a reduction in the number of contestants using horses.

		modified the control of	2200 000	B		
HIGH ENTRI	ES	PRIZE M	ONE	Y	MEMBERSHI	P
Peel	73	King & Vaughan	\$	1,123.50	North Dumfries	347
Haldimand	70	North York	\$	1,013.00	Blenheim	250
Oneida	68	Peel County	\$	949.00	Oneida	216
East York	66	Haldimand	\$	862.00	King & Vaughan	213
Russell	62				Waterloo Twp.	118
North Dumfries	59				Î	
North Ontario	58					

A total of \$26,162.50 was paid by Branch Matches in prizes as compared to \$22,651.40 in 1961. Total membership recorded by branch associations stands at 2,891.

As a result of the keen interest taken by Hastings County farm groups in the 1961 International Plowing Match a branch of the Ontario Plowmen's Association was formed and their first match was held in October with 44 entries. Preparation for the match was made well in advance by holding coaching classes for boys in high schools in North, Central and South Hastings.

The group policy covering Public Liability and Property Damage for all branches, introduced a number of years ago, is still in effect. Branches have found the plan to be quite satisfactory as well as economical.

The Ontario Department of Agriculture, through the Agricultural Societies Branch, supplied judges for all junior and senior matches, also instructors for coaching classes on plow adjustments and competition plowing.

INTERNATIONAL PLOWING MATCH

The Owen Sound area in Grey County was an ideal location for the 1962 International Plowing Match and Farm Machinery Demonstration. Perfect weather prevailed throughout the four days. Soil conditions were just right for plowing. The policy of holding the match on a Saturday, introduced for the first time in 1961, was again followed. This, coupled with better than average conditions, resulted in the highest gate receipts of any International Plowing Match since it was organized about 50 years ago. It meant that more people paid to see the event than at any time in the history of the Association.

Much credit must go to the citizens of Grey County, both urban and rural, for their support and co-operation, also such bodies as the County Council, the City of Owen Sound, Township Councils especially Derby, and local school boards.

ENTRIES

	Horse	Tractor	Total
October 10th	11	86	97
October 11th	21	152	173
October 12th	21	121	142
October 13th	22	130	152
	75	489	564
1961 Total	. 56	370	426
1960	68	370	438
1959	72	460	532
1958	53	424	477
1957	44	482	537
1956	111	487	598
1955	47	564	611

It is noted there was an increase in entries over the past year by 138. Much of this occurred in the junior classes, particularly the Inter-Secondary School and Inter-County. The entries were also the highest they have been since 1956. This may be due in part to competitiors becoming more accusomed to the use of mounted plows for competition work.

Mayors' Competition

A challenge to compete in a class open only to Mayors in Ontario was offered by Mayor Eddie Sargent of Owen Sound. This resulted in about 20 entries. It was won by M. J. Patrick, Mayor of Windsor.

Tented City

The show area commonly known as Tented City covered 50 acres and was occupied by 200 Exhibitors and 33 Food Caterers. The frontage reserved was a little above last year and the streets, of which there were four, were laid out in much the same fashion. Such services as hydro, telephone, water, toilets etc., were conveniently arranged and in general were quite satisfactory.

Official Opening

The Hon. Wm. A. Stewart, Ontario's Minister of Agriculture, was the guest speaker at the opening held at 2 p.m. on October 10th. He was introduced by the Hon F. Oliver, Member for South Grey. Other guests included local members of parliament and heads of municipalities. Those entered in the Wardens' Class were also in the party. As usual an official luncheon and parade, through the courtesy of this Association, preceded the opening ceremonies.

Local Counties Competition

In addition to classes for local counties a number of open classes were provided on the opening day. Neighbouring counties co-operated with Grey in financing the first day prize list, namely, Simcoe, Bruce, Wellington and Algoma. This was Algoma's first opportunity to share in the program of an International Match. Several of their best plowmen entered and were well up in the prize money, winning 13 cash prizes during the four days.

The Ontario Championship Class was the main attraction of the first day. It brought out 19 of Ontario's top plowmen. Wm. Hostrawser, Malton and Jos. G. Tran, Claremont, were placed first and second respectively. They are eligible to compete for Ontario in the 1963 Canadian Championship Contest.

The other class which drew much interest was the Wardens'. The challenge was issued by Henry F. Lantz, popular Warden of Grey County. The contest was won by Warden Hugh MacLachlan, Brant County, with Geo. McCutcheon, Warden of Huron, the runner-up. Mr MacLachlan received the John Parrott Challenge Trophy, also a County of Grey Trophy.

Eaton's of Canada Class

There was a substantial increase in entries—28 junior competitors as compared to 12 a year ago. This in part was due to the assistance and encouragement given winners of Eaton trophies by branch matches to enter this class. The Eaton Trophy was won by Clayton D. Hunter, Hagersville, with Bob Hagan of Caledonia, a close second.

Inter-Secondary School Competition—Canada Packers Ltd.

Twenty-two schools entered teams as compared to 18 in 1961 and 10 in 1960. Holding this class on Saturday may be the reason for the increased interest. Coaching classes and junior matches are encouraging high school pupils and school boards to enter the International.

Caledonia High School had the winning team and received the Canada Packers Trophy. The team members, Thos. L. Hunter and Bob Hagan, were also awarded gold watches. The runner-up was Woodbridge High School and team members were Barry and Wayne Diceman.

The Seaforth High School Band was there to support the South Huron District High School Team. This is a very excellent band and their performance in parades and drills, also at the plowmen's banquet, drew much favourable comment.

Inter-County Competition - British American Oil Co. Ltd.

The B.A. Oil Trip for the top team in this contest was won by York County. Team members were Barry Diceman, Woodbridge and Peter Gibbons, Stouffville. In second place was the Waterloo County Team — Howard and David Rife, both of Galt. A total of 16 teams participated compared with 9 in 1961. Contestants were again required to plow two lands one in which no handling of furrows was permitted.

Accompanied by Grant Sweiger, Markdale, who served as Secretary of the Local Committee, the York County team will be given a trip to another Canadian Province by British American Oil Co.

Esso Championship Class

The 18 contestants in this class were winners of Esso Specials in tractor plowing at branch matches. The award of a trip to a Canadian Province by Imperial Oil Ltd., went to Floyd Forsyth, Stouffville and Miss Vera Jaques, Hagersville. Plans for the trip will be worked out with representatives of the company and trip manager Alvin Mark of Cameron.

It is recalled that Wm. Huffman, Hagersville and George Mitchell of Ayr, were the 1961 winners of the Esso trip. In March 1962 accompanied by Robert Campbell, Churchill, they visited points of interest in British Columbia and while there took part in the Chilliwack Plowing Match. Both were successful in winning prizes.

Queen of the Furrow Contest

The contestants were required to plow as well as answer questions on plowing and give a talk on plowing match activities in their home county. Appearance and department were also considered. Seven counties were represented and the winner was Mrs. Barbara Cunnington of Peel County.

Tractor Drawing Contest

This was a new feature and proved most popular with the spectators. The committee had no trouble getting support in the way of prizes from a local Good Year Tire dealer.

Horse Shoe Pitching Contest

A total of 14 teams compared to 8 in 1961 took part. The winners were a team from Wilmot Township Branch comprised of Earl Hohl, Wellesley and Sid Lies, Linwood. They won over the Centre and West Simcoe Branch team of Ellsworth Crawford, Minesing and Oscar Rowe, New Lowell, champions in 1960 and 1961.

C.B.C.

We were again fortunate in having the CBC and many of their staff members at the match. In place of a tent a large house trailer with a high platform in front served as the broadcasting and television centre.

Parades and Bands

Fine weather and good footing in Tented City permitted the staging of an exhibitors parade through the streets on each of the four days. The services of local bands were procured and these along with several floats made this feature of the match popular with the visitors. Exhibitors appreciate the opportunity to display their equipment in this manner.

A local and long distance telephone service was again provided through courtesy of the Bell Telephone Company.

Ontario Hydro-Electric Power Commission, through its area office in Barrie, undertook the tremendous job of supplying hydro power for all exhibitors. This meant erecting power lines on four streets, then dismantling them at the close of the show.

Through the courtesy of the Ontario Divisions of Imperial Oil Limited all contestants were supplied with gasoline for their tractors without charge. The company as usual set up and operated a service station in the Tractor Park for this purpose.

Daily Programme

The Family Herald again rendered a great service to visitors, contestants and exhibitors by printing and distributing daily programs. These covered various events taking place also entries by plowmen, land numbers and prizes won.

Peirson Building Products of Peterborough again supplied a building for administration offices.

Provincial Police

The Attorney-General's Department supplied a very efficient staff of provincial police officers. They were under the supervision of Inspector Harris of the Mount Forest Detachment. A fine job was done by these men in the handling of traffic on the roads in the area and in Tented City.

Representatives of the Ontario Fire Marshal were on hand with the necessary equipment for fire protection and rendered a great service.

The Department of Highways erected appropriate signs leading to the International Match. These are the property of the Department and are reconditioned after each match and transferred to the division in which the next event occurs.

Farmstead Improvement Competition

Over 100 farms throughout Grey County took on a different appearance prior to the match as a result of the Farmstead Improvement Competion. This was spearheaded by the Agricultural Representative, Grant Sweiger of Markdale. He had an excellent committee working with him, also local organizations, municipal councils, press and radio.

The O.P.A. made a grant of \$500.00 to the prize list. Awards were announced at a get-together in Eaton's tent during the match.

Horticultural Project

Under the direction of Russell Gomme, Assistant Director of this Branch, and in co-operation with District Director of the Ontario Horticultural Association Mr. Clifford Epps, Clinton, and the local horticultural societies, a booth was in-

stalled in one of the County Exhibits Tents for the purpose of contacting citizens interested in horticulture and in becoming a member of a local society. The display was built and flowers supplied by the Owen Sound Society. More than 1,000 people registered. Societies helping with the project besides Owen Sound were: Markdale, Tara, Chesley, Paisley and Port Elgin.

Women's Program

For the first time the International had a special program for women throughout the four days. It was planned and arranged by the Local Committee. Space for a large tent with seating for 500 was arranged. Demonstrations included fashion shows, beauty tips, cooking and hair styling. Co-operation in carrying through the program came from many sources. Among the local agencies were noted The Sun-Times, also merchants of Owen Sound. Miss Anna MacDonald of CKNX and Miss Flora Durnin, Home Economist, helped considerably in planning the program. Lucky draws for merchandise were held each day including a Westinghouse range on the last day.

Local Manufacturers Display

The Local Committee in their attempt to arouse interest among manufacturers and processors in the immediate area of the match set up a special exhibit section. They were successful in getting a great many to participate. Tents containing well designed stalls were provided, the cost of which was financed by sale of exhibit space on a square foot basis.

Canadian Championship Contest

The contest was held for the first time in Manitoba in conjunction with the Portage la Prairie Match in June.

Ontario was represented in the contest by Grant Wells, Stouffville and William Hostrawser, Malton. Seven provinces—British Columbia, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick and Prince Edward Island — were represented. The winners were Toby Trimble of Portage la Prairie and Grant Wells of Stouffville. These two plowmen will represent Canada in the 1963 World Contest at Caledon, Ontario.

The Canadian Plowing Council will be host for the 1963 World Contest scheduled to take place at Caledon on the Conn Smythe Farms in conjunction with Ontario's International Plowing Match, October 8th to 12th.

1962 World Contest

Cyril Heynes, Manitoba and Thomas Hickman, British Columbia, were the Canadian representatives in the World Contest in Holland. They made a creditable showing in the face of stiff competition. George Fletcher, Merlin, Ontario, a past president and currently a director of the Ontario Plowmens' Association, was the trip manager.

Contests in Peel — October 8th to 12th

A local Committee in Peel County will be working with the World Ploughing Organization, the Canadian Plowing Council and the Ontario Plowmen's Association, in conducting the largest plowing match event in the world. A number of O.P.A. Directors have been given added responsibilities in planning and carrying on the various contests.

Future Matches Planned

The 1964 International Plowing Match will be held in Peterborough; in York in 1965; Huron in 1966 and Simcoe in 1967.

Two other counties are keenly interested, namely Wellington and Brant.

Exhibit — Farm Show

The Association co-operated with the Peel County Local Committee in arranging an information booth at the Canada Farm Show in the Coliseum of the C.N.E. in January. Many inquiries were received and considerable literature on the plowing contests in Peel were distributed. The display contained a pyramid structure resembling the Cairn of Peace with names of countries likely to have contestants in the World Contest.

HORTICULTURAL SOCIETIES

Eight new societies were organized in 1962. These included Brampton, Greater North Bay, Hanover, Lakefield, Niagara-on-the-Lake, Port Dover, Shelburne and Stittsville. The total membership of these new societies is approximately 1,000.

CERTIFICATES

As a means of recognizing new societies the Department of Agriculture will, in future, supply each with an engrossed certificate carrying the provincial crest and the signature of our Minister. Arrangements have been made for all those organized during the past two years to receive their certificates this year.

Grants

No change was made in the amount of appropriation budgeted for grants to Horticultural Societies. Two years ago it was increased from \$40,000.00 to \$45,000.00 This works out to a little more than \$1.00 per member or approximately \$200.00 per society.

Statistics

The membership stands at 40,027 and expenditures on horticulture were \$163,-573.37. This covered various projects such as flower shows, garden competitions, civic improvement, meetings etc. The amount is down some from the previous year but it is close to \$10,000.00 more than the average expenditures of the previous five years.

The increase in membership amounts to approximately six per cent and it is the first time it has exceeded the forty thousand mark. Six years ago the membership was 36,935.

All societies received the 1962 grants on 1961 expenditure and membership. Eighteen societies earned the maximum grant of \$500,00.

District Meetings

All districts of the Ontario Horticultural Association with one exception held a district meeting or convention during 1962. Most of the meetings were held in June, September or October.

Most of the meetings were educational and included panel discussions on local horticultural problems and addresses by individuals.

District events drew an average attendance of 150. Some were well over 250, which indicates the interest and need for regular events such as this to exchange ideas.

Competitions

The Association conducted two competitions throughout 1962. Both were considered successful.

The Photographic Competition was strengthened considerably through the generosity of the Canadian National Exhibition who donated \$200.00 towards this project. Over 300 entries were received and from the judges' comments the photography was exceptional.

The rules and regulations for the Scrapbook Competition, as recommended by the Junior Committee, were sent to all societies in late spring. Many societies did not have an opportunity to promote this project until the fall. In some cases the results were amazing — Stoney Creek Horticultural Society received over 90 entries.

Publicity Projects

Many societies have continued to advertise their activities through a general exhibit at fall fairs and exhibitions. Horticultural libraries are also being prepared in co-operation with the local library boards.

Another interesting means of advertising activities has been by continual use of a show case in the Main Parliament Buildings, Queen's Park, Toronto. At present dried flower arrangements from District 16 are on display. Thousands of people view these various exhibits.

Junior Programs

It is encouraging to report that many societies have planned or already started a Junior Society. This is considered a major step towards future horticultural members, as well as acquainting young people, particularly the 7 to 15 age group, with horticulture in their community.

GRANTS UNDER THE COMMUNITY CENTRES ACT — APRIL 1, 1962 to MARCH 31, 1963.

Municipality	Centre	Amount	
	ARENAS		
Twp. of Russell	Embrun	\$	5,000.00
Village of Beaverton	Beaverton		580.00
Village of Maxville	Maxville		100.00
Village of Arthur	Arthur .		2,130.00
Village of Brussels	Brussels		1,545.00
Village of Long Branch	Birch Cliff		5,000.00
Twp. of Etobicoke	Central Park		5,000.00
Twp. of Etobicoke	Cloverdale-Edgewood		5,000.00
Twp. of Etobicoke	East Richview		5,000.00
Twp. of Etobicoke	Pine Point		5,000.00
Twp. of Etobicoke	West Mall		5,000.00
Village of Markdale	Markdale		1,615.00
Thase of Markage	ATASSAARSTON	Total — 12 \$	40,970.00

ARENA and HALL

City of Sarnia	Children's Community Bldg.	10,000.00
Twp. of South Plantagenet	St. Isidore de Prescott	10,000.00
Town of Forest	Forest	10,000.00
Town of Mimico	Mimico	10,000.00
Twp. of Clarence	Clarence Creek	10,000.00
Town of Wingham	Wingham	5,000.00
	Total — 6	\$ 55,000.00

HALLS

Twp. of Oro	Hawkestone	3,540.00
Twp. of Flos	Edenvale	855.00
Twp. of Machin	Eagle River	825.00
Twp. of Scott	Sandford	120.00
City of Fort William	Wayland Park	4,580.00
City of Windsor	Alpha Kai Omega	5,000.00
Twp. of Whitchurch	Vandorf	110.00
Twp. of King	Schomberg	500.00
City of Oshawa	Harman Park	2,005.00
Twp. of Ross	Queen's Line Institute	100.00
Twp. of Orillia	Washago	1,575.00
Twp. of Medora & Wood	Walker's Point	835.00
Twp. of Dysart et Al.	Harcourt	200.00
Twp. of Hullett	Auburn	4,900.00
Twp. of Adelaide	Craithie	40.00
Twps. McCrosson & Tove	llBergland	80.00
Town of Fort Frances	McIrvine Cmty. Centre	590.00
Twp. of Wellesley	Linwood	3,850.00
Twp. of Markham	Victoria Square	2,070.00
Twp. of Paipoogne	Rosslyn-Slate River	2,735.00
Twp. of North Dorchester	Avon	170.00
Village of Courtright	Courtright	5,000.00
Twp. of Georgina	Port Bolster	1,840.00
Twp. of North Cayuga	Kohler	1,040.00
Twp. of Sherborne	Dorset	30.00
Village of Finch	Finch	735.00
Twp. of Lobo	Lobo	145.00
Twp. of Bagot & Blythfiel	ldCalabogie	375.00
Town of Kearney	Kearney	1,860.00
Twp. of North York	Lawrence Heights	5,000.00
Twp. of Neebing	Blake	125.00
Twp. of Gloucester	Orleans	2,090.00
Twp. of Holland	Walters Falls	1,000.00
Twp. of Harvey	Lakehurst	150.00
Town of Cache Bay	Cache Bay	2,135.00
Town of Oakville	Boyne	5,000.00
City of Fort William	Minnesota Park	5,000.00

Twp. of Neebing	Vickers Heights	2,145.00
Twp. of Fitzroy	Fitzroy Harbour	65.00
Twp. of Whitney	Whitney	175.00
Twp. of Lanark	Hopetown	15.00
Village of Waterdown	Sealey Park	40.00
City of Toronto	Pape Avenue	5,000.00
City of Sarnia	Newton Park	2,900.00
Twp. of Brantford	Tranquility Cmty. Centre	5,000.00
Twp. of Tehkummah	South Bay Mouth	365.00
Twp. of Toronto	Greyscher House	5,000.00
Town of St. Marys	Cadzow Park	1,760.00
Twp. of Otonabee	Williers Community Centre	270.00
Twp. of Morson	Morson	550.00
Twp. of North Elmsley	North Elmsley	3,635.00
Twp. of Erin	Ballinfad	5,000.00
Twp. of Johnson	Desbarats	340.00
	Total — 53	\$ 98,465.00

OUT-DOOR RINKS

Twp. of Oliver	Murillo	375.00
Durham County District	Victoria Street Recreation	
High School Board	Area	2,775.00
Twps. of Denbigh, Abinge	r	
& Ashby	Denbigh	160.00
R.C.S.S.	River Valley	3,825.00
Twps. Macdonald, Mere)	
dith & Aberdeen Add'l.	Echo Bay	55.00
Twp. of Orillia	Washago	150.00
Twp. of McCrosson & To) 	
vell	Bergland	745.00
Pointe au Baril School		
Board	Pointe au Baril	1,050.00
Sturgeon Falls Separate	St. Joseph & Sacre Corur	
School Bd.	School	525.00
Sturgeon Falls Separate		
School Board	Our Lady of Sorrows	225.00
Sturgeon Falls Separate		445.00
School Board	Notre Dame School	115.00
City of Toronto	Riverdale	5,000.00
Twp. of Olden	Olden Twp.	225.00
Twp. of Lobo	Lobo	135.00
Town of Riverside	Riverside	1,265.00
Town of Cache Bay	Cache Bay	855.00
Twp. of Dilke	Pinewood	650.00
Village of Magnetawan	Magnetawan	100.00
Twp. of Laird	Bar River	325.00
Twp. of Fitzroy	Kinburn	1,085.00
Twp. of Caradoc	Mount Brydges	870.00

- 077.11.1	Out on any any Doub		
Twp. of Etobicoke	Queensway Park		1,005.00
Bonfield Twp. Area School	Rutherglen		1,275.00
Bd.	Lynden		1,910.00
Twp. of Ancaster	Lynden	Total — 24	\$ 24,700.00
			,,
	SWIMMING POOLS		
City of Fort William	Minnesota Park		5,000.00
Town of Wallaceburg	Wallaceburg		4,425.00
Town of Cochrane	Cochrane		365.00
City of Barrie	Barrie - Grove St.		5,000.00
City of Toronto	Riverdale		5,000.00
Village of Beamsville	Kinsmen Park		5,000.00
Twp. of Elma	Atwood		4,445.00
City of Owen Sound	Harrison Park		2,040.00
Town of Grimsby	Grimsby		5,000.00
City of Toronto	Pape Avenue		5,000.00
City of Toronto	Woodbine Beach		5,000.00
	Woodbine Beach Diving		~ 000 00
City of Toronto	Bay		5,000.00
Twp. of Clarke	Orono		395.00
Town of St. Marys	Cadzow Park		220.00
Twp. of Etobicoke	Alderwood		5,000.00
City of Toronto	Woodbine	Total — 16	5,000.00 \$ 61,890.00
		10tai — 10	\$ 01,090.00
	ATHLETIC FIELDS		
Twp. of Scarborough	Anson Park		900.00
Twp. of Scarborough	Blantyre Park		2,290.00
Twp. of Scarborough	Densgrove Park		4,485.00
Twp. of Scarborough	Dunlop Park		1,990.00
Twp. of Scarborough	No. 401 Park		680.00
Twp. of Scarborough	Heron Park		560.00
Twp. of Scarborough	Highview		4,680.00
Twp. of Scarborough	Ionview Park		1,040.00
Twp. of Scarborough	Knob Hill Park		4,425.00
Twp. of Scarborough	Maryvale Park		680.00
Twp. of Scarborough	McGregor Park		1,595.00
Twp. of Scarborough	Wexford Park		1,525.00
Village of Stirling	Stirling		1,060.00
Twp. of Southwold	Shedden Riverside		1,260.00
Town of Riverside Twps. of Macdonald, Me			1,625.00
dith & Aberdeen Add'l.	Echo Bay		30.00
Twp. of Sandwich East	Walker Home Sites Park		1,250.00
Twp. of Lobo	Komoka		900.00
City of Peterborough	Motorways Park		2,500.00
2.07 02 2 000100100811	I. I O TO I THE I THE		2,500.00

Twp. of West Flamboro Strabane	705.00
Village of Kemptville Riverside Co	ommunity Park 290.00
Twp. of Scarborough Birchmount	105.00
Twp. of Scarborough Clairlea Parl	173.00
Twp. of Scarborough Cedar Brook	
Twp. of Scarborough Churchill He	
Twp. of Scarborough Cornell Play	
Twp. of Scarborough Corvette Par	150.00
Twp. of Scarborough Danforth Ga	ardens Park 735.00
Twp. of Scarborough Dorset Park	45.00
Twp. of Scarborough Edge Park	105.00
Twp. of Scarborough Edgewood P	ark 860.00
Twp. of Scarborough Halbert Park	55.00
Twp. of Scarborough Highland Ht	s. Playground 125.00
Twp. of Scarborough Horton Park	
Twp. of Scarborough Lynngate Pla	tyfield 1,190.00
Twp. of Scarborough McCowan R	
Twp. of Scarborough Rowatson Pa	ark 510.00
Twp. of Scarborough St. Andrew's	
Twp. of Scarborough Totts Playgro	
Twp. of Scarborough Vradenburg	
Twp. of Medonte Warminster	880.00
Village of Neustadt Neustadt	710.00
Town of Cochrane Cochrane	355.00
City of Sarnia Agincourt Pa	
City of Sarnia High Park	30.00
City of Sarnia Newton Parl	
City of Sarnia Coronation I	
2	nmunity Park 1,540.00
City of Sarnia Oak Acres	75.00
Town of Ajax Cedar Park	1,585.00
a o mar or a spane	East End Park 185.00
Town of Fort Frances Fort Frances	
Park	3,310.00
	Rotary Park 290.00
Town of Fort Frances Fort Frances	
Arena Park	5,000.00
Twp. of Wellesley Linwood	455.00
Twp. of Vaughan Maple	1,045.00
Twp. of Markham Victoria Squa	
Village of Port Perry Port Perry	1,460.00
City of Barrie Kinsmen Par	4 650 00
Village of Arkona Arkona	1,340.00
Town of Newmarket Haskett Park	277 00
Town of Newmarket Newmarket	390.00
	4 000 00
	210.00
0	220.00
1	80.00
Twp. of Essa Angus	00.00

William of Lucen	Lucan	2,500.00
Village of Lucan	Lucan Meadows Playground	720.00
Town of Arnprior	Norma Street	520.00
Town of Arnprior		325.00
Twp. of Chatham	Tupperville	1,555.00
Twp. of South Grimsby	Smithville	350.00
City of London	Victoria Park	
City of London	Kiwanis Park	2,970.00
City of London	Labatt Memorial Park	1,755.00
City of London	Grosvenor & Elliott Streets	680.00
Village of Long Branch	Birch Park	5,000.00
Town of Burlington	Mohawk Park	295.00
Twp. of Nepean	City View Park	425.00
Twp. of Nepean	Lt. Gen. E. M. Burks Park	345.00
Twp. of Nepean	Merivale Gardens Park	130.00
Twp. of Nepean	Olmstead Park	420.00
Twp. of Nepean	Orchard Park	45.00
City of London	Oakridge Park	195.00
Twp. of North York	Ancaster Park	805.00
Twp. of North York	Bond Avenue Park	605.00
Twp. of North York	Broodlands Park	5,000.00
Twp. of North York	Gary Park	385.00
Twp. of North York	Giltspur Park	2,940.00
Twp. of North York	Goulding Park	1,820.00
Twp. of North York	Harding Park	1,420.00
Twp. of North York	Hollywood Park	625.00
Twp. of North York	Ledbury Park	1,075.00
Twp. of North York	Maple Leaf Park	700.00
Twp. of North York	Milgate Park	987.00
Twp. of North York	North Park	3,990.00
Twp. of North York	Silverview Park	660.00
Twp. of North York	Sweeny Park	725.00
Twp. of North York	Three Valleys Park	1,335.00
Twp. of North York	Wigmore Park	410.00
Twp. of North York	Wilmington Park	4,060.00
Twp. of Tuckersmith	Tuckersmith Twp.	4,380.00
City of Owen Sound	Harrison Park	310.00
Morrisburg Public School		310.00
Bd.	Morrisburg	240.00
Town of Forest	Forest	4,350.00
Twp. of Lavant	Lavant	45.00
Twp. of Delaware	Delaware	675.00
City of Brantford	Cockshutt Park	3,239.00
City of Brantford	Denon Down Park	2,465.00
City of Brantford	Echo Park	1,455.00
City of Brantford	Iroquois Park	865.00
City of Brantford	Parsons Park	3,690.00
City of Brantford	Recreation Park	1,915.00
City of Brantford	Waterworks Park	
City of Brantford	Conklin Park	1,010.00 275.00
City of Braillioid	Conkin I alk	213.00

City of Brantford	Princess Anne Park	265.00
City of Brantford	Spring Street Park	210.00
Twp. of Calvert	Abitibi Ball Park	1,000.00
Twp. of Nassagaweya	Campbellville	5,000.00
City of Sarnia	Baxter Park	28.00
City of Sarnia	Canatara Park	5,000.00
City of Sarnia	Errol Russell Park	9.00
City of Sarnia	Lansdowne Park	110.00
City of Windsor	Tecumseh Community Park	30.00
Twp. of Dilke	Pinewood	1,825.00
Twp. of Russell	Embrun	1,245.00
Twp. of Toronto	Hillside Park	2,815.00
Twp. of Wilmot	St. Agatha	715.00
Town of Arnprior	Municipal Park	730.00
Town of Fergus	Fergus	1,625.00
Town of Mount Forest	Mount Forest	1,265.00
Twp. of Etobicoke	Central Park	5,000.00
Twp. of Etobicoke	Lambton-Kingsway Park	2,770.00
Twp. of Etobicoke	Queensway Park	2,770.00
Twp. of Etobicoke	Woodford Park	2,770.00
Village of Hagersville	Hagersville	2,125.00
Village of Petawawa	Petawawa	2,770.00
Twp. of West Flamboro	Bullocks Corners	235.00
Twp. of Sandwich South	Sandwich South-Weston	205.00
	Total — 138	\$182,948,00
	SUMMARY OF GRANTS	
Total Paid in Grants	Arenas	\$ 40,970.00
	Arena & Hall	\$ 55,000.00
	Halls	\$ 98,465.00
	Out-Door Rinks	\$ 24,700.00
	Swimming Pools	\$ 61,890.00
	Athletic Fields	\$182,948.00
		\$463,973.00
		4.00,570.00

Agricultural Rehabilitation and Development Branch

The Agricultural Rehabilitation and Development Branch was established October 15th, 1962, for the purpose of administering federal-provincial programs in Ontario under the Agricultural Rehabilitation and Development Act of Canada. The Agricultural Rehabilitation and Development Act (Ontario), enacted in December 1962, enables the Minister of Agriculture for Ontario to make agreements with the Government of Canada to undertake the following four broad programs in rural development.

- (1) Projects for the more efficient use and economic development of agricultural lands.
- (2) Projects for the development of income and employment opportunities in rural areas.
- (3) Projects for the development and conservation of water supplies for agricultural purposes and for soil improvement.
- (4) Projects of research respecting the more effective use and economic development of land, the development of income and employment opportunities in rural areas and the development and conservation of soil and water for agricultural purposes.

Agreements

The following Federal-Provincial Agreements under the Agricultural Rehabilitation and Development Act (Ontario) have been made —

- (1) General Agreement
- (2) Pasture Projects Agreement
- (3) Alternative Uses of Land Agreement
- (4) Soil and Water Conservation Agreement
- (5) Rural Development Areas Research Agreement
- (6) Research Projects Agreement

A.R.D.A. Directorate

A Directorate has been established under the Agricultural Rehabilitation and Development Act (Ontario) to co-ordinate the programs of the provincial government relating to rural development. The Directorate consists of senior members from the following departments of government — Agriculture; Lands and Forests; Municipal Affairs; Treasury; Economics and Development.

The Chairman of the Directorate is the Director of this Branch of the Department of Agriculture.

The following projects have been reviewed by the Directorate and recommended to the Minister for implementation commencing April 1st, 1963.

(1) Acquisition and establishment of Community Pastures in the County of Victoria and the District of Temiskaming.

- (2) Acquisition and establishment of a wildlife management and public hunting area in Simcoe County.
- (3) A comprehensive rural development study in the eleven counties east of and including Frontenac and Renfrew.
- (4) A rural urban study in Halton County to seek solutions to the problem of reconciling the use of agricultural land within or adjacent to a growing urban municipality.

The Branch has participated at meetings in the following places to discuss the application of A.R.D.A. programs with agricultural organizations —

Belleville, Dryden, Emo, Forester's Falls, Fort William, Guelph, Kemptville, Kingston, Lindsay, London, Madoc, Napanee, New Liskeard, Niagara Falls, Ottawa, Picton, Renfrew, Vineland.

Co-operatives Branch

The first major task assigned to the Co-operatives Branch which was organized in August, 1961, was to conduct a survey or census of the co-operatives in the Province. This assignment was undertaken during the summer of 1962 with the assistance of the Economics Department of the Ontario Agricultural College at Guelph and the Economics Division of the Canada Department of Agriculture at Ottawa.

Field visits were made to 389 co-operatives and usable records and information obtained from 281 co-operatives which were actively engaged in business operations during 1962.

The records were sorted and tabulated during the fall and winter of 1962-63 and preliminary reports were made at various co-operative meetings in the Province throughout the winter.

The total amount of business transacted by co-operatives in Ontario during the year under review was \$156.8 million. This total includes all functions of the co-operatives, i.e. marketing of farm products, purchasing and distribution of farm supplies and consumer goods and services rendered to members.

The total assets reported by all local co-operatives in Ontario during 1962 was \$52.7 million, of which \$21.5 million represented investment in fixed assets such as plant and equipment.

The information gathered in the survey will form the basis for a report which is to be issued in 1963. This report will be made in two parts, one of which will cover activities in 1962 and the other which will relate present developments to the developments reported in a similar survey made in 1947.

The Co-operative Loans Act

Under the Co-operative Loans act, loans may be made to agricultural co-operatives to assist them in financing capital expenditures for facilities for grading, packing, storing, drying, processing or marketing of farm products.

During the year ended March 31, 1963, eleven loans totalling \$442,500 were completed by the Cooperative Loans Board as follows:

Durham Growers Co-operative Limited —	Cold Storage —	\$ 25,000.00
Oakville Dairy Co-operative Limited —	New Dairy —	100,000.00
Grey Farmers' Co-operative Association —	Feed Mill —	20,000.00
Ayr District Co-operative —	Feed Mill —	55,000.00
Carleton-Russell Co-operative —	Feed Mill —	60,000.00
Ontario Turkey Growers Co-operative —	Processing Plant —	100,000.00
Temiskaming Producers Co-operative —	Feed Mill —	16,000.00
Exeter District Co-operative —	Feed Mill —	15,000.00
Eganville Co-operative Association —	Feed Mill -	15,000.00
Grafton Farmers' Co-operative —	Feed Mill —	25,000.00
Co-operative Agricole d'Earlton —	Feed Mill —	11,500.00

In 1962 there were fourteen such loans totalling \$538,300.00 and at the end of the 1963 fiscal year there were outstanding through loans to 104 co-operatives \$2,963,573.60 compared to \$2,826,712.00 to 93 co-operatives at the end of the fiscal year 1962.

Guaranteed bank credits were made during the year to the following:

Ontario Flue-Cured Tobacco Growers' Marketing Board — \$10,388,739.42 Rainy River Stockmen's Co-operative — 40,000.00

\$10,428,739.42

The outstanding balance of the three bank guarantees made prior to the 1962-63 fiscal year has been further reduced to a total of \$134,000.00 and it is anticipated that they will be paid in full in the near future.

During 1962 staff members of the Branch were able to visit almost every cooperative having a loan under this Act.

Dairy Branch

The Dairy Branch is responsible for the administration and enforcement of The Milk Industry Act, The Oleomargarine Act, The Edible Oil Products Act and the dairy products regulations under The Farm Products Grades and Sales Act.

In addition to the enforcement of the above acts, the personnel do a great deal of extension work in respect to all segments of the dairy industry within the province and work very closely with the Extension Branch of the Ontario Department of Agriculture.

The Dairy Commissioner supervises and co-ordinates the administration of the various acts and the extension work done by the personnel.

The Milk Industry Board, under The Milk Industry Act, is the decision-making authority and is responsible for its enforcement.

The Dairy Branch operates under two main divisions — Fluid Milk and Milk Products; each administered by a Director. In the field the province is currently divided into thirty-one districts, each supervised by a senior fieldman. There are seven fieldmen specifically responsible for the cheese industry, two fieldmen are Inspectors under The Oleomargarine and Edible Oil Products Acts, two fieldmen work out of Head Office and act as Field Supervisors and Auditors. A Supervisor of Cheese Operations for Eastern and Central Ontario is responsible to the Director of the Milk Products Division. There is a total of 52 fieldmen on the Dairy Branch field staff; four having been added during the year with the expansion of the milk quality control program.

The Associate Director of Dairying, while responsible for the full administration in the absence of the Dairy Commissioner, is in charge of the development and enforcement of the milk and cream quality program. The Director of the Fluid Milk Division and the Director of the Milk Products Division, in addition to the administration of their divisions, are also responsible for the supervision of the fieldmen in Western and Northern Ontario in the case of the former and in Central and Eastern Ontario in the case of the latter. The Assistant Director assists the two division Directors and in addition acts as Secretary to the Milk Industry Board.

The Milk Industry Advisory Committee

The Milk Industry Advisory Committee provides a common meeting place for both the processor and the producer groups and acts as a clearing house for the various problems arising in the dairy industry and from such deliberations recommendations respecting the producing and marketing of milk and milk products are made to the Minister or to the Dairy Commissioner.

Most of the discussions during 1962 revolved around the unified marketing plan being developed by the dairy producer groups in the province.

The committee met three times during 1962.

The members for 1962 were:

Representing the processors: A. E. Gignac, H. K. Fallis, S. K. Ault, A. R. Weber, Roy Gildner, John Fraser

Representing the producers: H. C. Arnold, J. Vanden Bosch, W. E. Honey, E. Farnsworth, E. H. Martin and Louis Davis.

Representing the Co-operative Union of Ontario: H. J. Schmidt.

The Ontario Milk Producers' Co-ordinating Board

The Ontario Milk Producers' Co-ordinating Board, a body corporate under The Milk Industry Act, provides an official contact for the Dairy Commissioner and The Milk Industry Board with the dairy producers of the province. This board consists of five members each from the four official dairy producer groups in the province, representing cream, cheese, concentrated milk and flluid milk. The main purpose of this board is to co-ordinate the thinking and planning of these four groups, in order to improve the production and marketing of milk and milk products. In this respect, they are very active in the promotion activities of the Ontario Dairy Princess Competition.

The Ontario Dairy Processors' Council

The Ontario Dairy Processors' Council is an organization composed of representatives from the five official processor groups in the province; representing cheese, butter, concentrated milk, ice cream and fluid milk. Its purpose is essentially the same as the Ontario Milk Producers' Co-ordinating Board but it is not officially provided for in The Milk Industry Act. It thus provides an official contact group for the processors by the Dairy Commissioner and The Milk Industry Board. It also provides an official liaison group with The Milk Producers' Co-ordinating Board.

The Formula Committee for Fluid Milk

The Formula Committee was quite active in 1962, particularly when it appeared that the indices making up the Formula indicated an increase in the formula price. The committee reviewed all the factors making up the formula. It was discovered recognition had not been given to the 12 cent per pound Federal subsidy for butter in calculating the price for butterfat. The Formula Committee are continuing to review the various indices, in order that the results will reflect as accurately as possible existing conditions in the industry.

With the resignation of Professor Ralph Campbell, Head, Department of Agricultural Economics, Ontario Agricultural College, Professor Stewart Lane who succeeded him as Head of this Department was appointed a member of the Formula Committee in his place. The other members of the committee are J. L. Baker. Dairy Commissioner, Chairman, and Dr. H. L. Patterson, Director, Farm Economics and Statistics Branch.

Special Inter-Provincial Dairy Committee

Early in 1963 it was suggested by the Department of Agriculture of the Province of Quebec, that the Province of Ontario and the Province of Quebec would each appoint a representative from the producer and the processor segments of the fluid and concentrated milk industries in their provinces and a Civil Servant representing the Department of Agriculture of each province. The appointment of members representing the Province of Ontario was announced shortly afterwards in the Legislature by the Honourable Minister of Agriculture.

The members of the Ontario Committee are: J. L. Baker, Dairy Commissioner. Chairman; S. G. K. Ault, representing the Ontario Concentrated Milk Manufacturers' Association; Emerson Farnsworth, representing the Ontario Whole Milk Producers' League; K. E. Gordon, representing the Ontario Milk Distributors'

Association and Orville Guy, representing the Ontario Concentrated Milk Producers' Marketing Board.

The Ontario members have met once by themselves and once with the members from the Province of Quebec.

The purpose of this joint committee is to discuss at both producer and processor level, the problems confronting the fluid milk and concentrated milk industry in the two provinces. Ontario and Quebec produce most of Canada's concentrated milk products and since these products at times are in surplus supply and are also competing with higher-priced fluid milk products, depressing the prices for milk paid to producers supplying the concentrated milk market, it is felt that if the two provinces could resolve this problem, the two segments of the dairy industry would be in a much healthier position.

A proposal has been made for a simple marketing plan, which would combine both fluid and concentrated milk in the Province of Ontario. With a new Marketing Act before the Legislature of the Province of Quebec, the members of the Quebec Committee are looking very hopefully to the development of a similar plan in that province.

Milk Marketing

During 1962 another effort was made by the four dairy producer groups to develop a unified milk marketing plan for milk and cream in the Province of Ontario. Many meetings were held to discuss such a plan. A Provisional Board was appointed. All efforts to have the proposed plan presented to the producers at large broke down and early in November the Provisional Board resigned.

Following this, the Executive of the Whole Milk Producers' League and the Ontario Concentrated Milk Producers' Marketing Board held discussions with a view to developing a joint plan for fluid and concentrated milk.

Exhibitions and Fairs

Personnel of the Dairy Branch again co-operated and assisted with dairy industry promotions at the major exhibitions and fairs in the province, as well as at several local and county fairs. Competitive butter and cheese classes were continued at the Canadian National Exhibition and the Royal Agricultural Winter Fair. In addition, competitive cheese classes are held at the British Empire Cheese Show, Belleville, and the Ottawa Winter Fair and competitive butter and cheese classes at the Dairymen's Association of Western Ontario in London. Annual grants of Two Hundred Dollars each were continued to the foregoing three exhibitions.

The Ontario Dairy Princess Competition

The Ontario Dairy Princess Competition continues to be one of the major dairy industry promotion projects in the province. It is jointly sponsored by the Milk Producers' Co-ordinating Board, the Canadian National Exhibition and the Ontario Department of Agriculture.

Many of the competitions at the county level have now become major promotion projects with most of these being held either during the month of June in the Shopping Centres of county towns or at major county fairs in the fall. Forty County Princesses competed at the Canadian National Exhibition in 1962. The winner of the Seventh Annual Competition was Miss Carolyn Murray of Stormont County, One of the major prizes again was a trip to the United Kingdom, courtesy

Pan American World Airways. While in the United Kingdom Miss Murray represented the Ontario Dairy industry.

Miss Murray has been doing an excellent job in promoting the dairy industry, speaking at many service clubs, Women's Institutes and other agricultural meetings, as well as numerous radio and television appearances.

Publications

The Dairy Publications Sub-committee of the Department of Agriculture reviews in collaboration with the industry the dairy publication and bulletin needs. The committee includes representatives from the Department of Dairy Science, the Ontario Agricultural College and the Dairy Division, Kemptville Agricultural School.

Research

With the formation of the Agricultural Research Institute of Ontario, some modification has been made in respect to the Ontario Dairy Research Committee. While these special projects have been recommended and co-ordinated through the Agricultural Research Institute, the sub-committee on dairy research will become more important now that all research in the province is co-ordinated through the Agricultural Research Institute.

The major study under way at the present time is that on milk composition at the Ontario Agricultural College and which was commenced in 1961. This project has another year to run before completion and the two progress reports released to date have provided some interesting information.

As a result of this study, it is expected that the dairy industry in the province will be giving very serious consideration to a method of paying for milk on protein or solids-not-fat, as well as butterfat.

Press, Radio and Television

Several Dairy Branch fieldmen have regular radio programs, on a semi-monthly or monthly basis. A number of fieldmen have also made appearances on the farm programs of the local television stations. Head Office personnel appear from time to time on radio and television. A number of the fieldmen are also writing articles respecting the dairy industry for special agricultural editions of local newspapers.

There continues to be the closest co-operation between the Dairy Branch personnel and the agricultural press, radio and television.

Out-of-the-Province Visits

The Dairy Commissioner attended the Sixteenth International Dairy Congress in Copenhagen, Denmark, in September, representing the province and was also one of Canada's eight official delegates. Following the Congress he visited the Mainland of Denmark to study dairy farming and processing, the Netherlands to study the cow testing and protein testing programs in that country and the United Kingdom to study the milk marketing programs and the new plan of purchasing milk on a quality and composition basis, being introduced in that country.

- Mr. J. M. Bain accepted an invitation to act as judge at the World Cheese Exhibition, sponsored by the Wisconsin Cheesemakers' at Wisconsin in October.
 - Mr. C. M. Meek attended the annual conference at the University of Illinois in

Urbana in January, respecting new dairy products. At this conference, special attention was being given to aseptically sterilized milk and aseptically sterilized concentrated milks, as important competitors to fresh fluid milk.

The Milk Industry Act

While the purpose and intent of this Act is to provide for the regulation and control of the marketing of milk, — fluid milk, cream and cheese — it does set out the regulations respecting the weighing, grading, sampling, testing and processing of milk and cream, as well as the farm conditions under which milk and cream are produced.

The Farm Products Grades and Sales Act

The dairy regulations under this act are administered by the Director of the Milk Products Division and the Federal Dairy Products Graders and Inspectors are appointed Graders and Inspectors under this act to enforce the regulations.

These regulations provide the grade and composition standards of all the milk products produced and sold within the Province of Ontario and are very similar to the Federal legislation which controls only import, export and inter-provincial movements. The packaging and labelling of the various containers for these dairy products are also provided in these regulations.

The Oleomargarine Act

The Oleomargarine Act is administered by the Dairy Commissioner, who is appointed Chief Inspector. All manufacturers and wholesalers are licensed. Close supervision is given to the advertising, composition and sale of oleomargarine.

Some trouble was encountered with one firm misrepresenting on the label the kind of oil used in the oleomargarine.

A considerable quantity of oleomargarine was placed under detention in Ottawa, which was found to be illegal in respect to oil content, water content, colour and packaging. Charges have been laid against this operator for selling and having in possession of sale oleomargarine which did not comply with The Oleomargarine Act.

Mr. H. W. Lemon of the Ontario Research Foundation is the official analyst appointed under this act and during the year 29 analyses were made on oleomargarine for colour, moisture, percentage of oil and the kinds of oil.

The following is a summary of the inspections made under The Oleomargarine Act during the year:

		1961	1962
Number	of cities, towns and villages visited	157	153
44	of manufacturers licensed	10	11
66	of manufacturers inspected	10	10
66	of wholesalers licensed	115	107
66	of wholesalers inspected	47	56
66	of wholesalers licensed as result of inspection	3	**
66	of restaurants inspected	1,307	1,421
66	of restaurants not using oleomargarine in any		
	form	540	41.3% 720 50.6%
+6	of restaurants using oleomargarine for cooking	332	25.4% 290 20.4%

64	of restaurants using oleomargarine on toast	101	7.7%	89	5.6%
66	of restaurants using oleomargarine				
	on sandwiches	212	16.2%	101	7.1%
66	of restaurants mixing oleomargarine with butter	122	9.3%	220	15.3%
46	of brands of oleomargarine being sold	38		42	
66	of retail outlets checked	1,667		1,352	
66	of moisture checks made	27		49	

The Edible Oil Products Act

The Edible Oil Products Act is also administered by the Dairy Commissioner, who is appointed as Chief Inspector. The same inspectors appointed under The Oleomargarine Act are also appointed under this Act.

This Act provides for the licensing of manufacturers and wholesalers of edible oil products designated in the regulations. Two manufacturers and 16 wholesalers were licensed under this Act.

A new manufacturer received a licence during the year to manufacture an imitation ice cream.

Several imitation coffee creams were found on the market; two produced locally and three imported. Action has been taken to have these properly labelled or removed from the market.

The Milk Industry Board of Ontario

The Milk Industry Board endeavours to sit for two-day meetings each month and if necessary, at more frequent intervals.

Mr. Alex Thurston of Almonte was appointed a member of the Board during the year. Other members are Judge A. B. Currey, Chairman; Gordon Greer and George McCague. Mr. A. P. Clark is Secretary.

The meetings of The Milk Industry Board and activities are as follows:

	1961	1962
	-	quantitative and quanti
Meetings Held	31	29
Public Inquiries		1
Decisions Made	542	389
Arbitrations re Producer Prices and		
Transportation Rates	15	12
Awards Made	4	7

Seven prosecutions were made during the year; five respecting distributors and two respecting processors.

A visit from members of the Quebec Agricultural Products Marketing Board was made in May and in October the Board visited the Quebec Agricultural Products Marketing Board in Montreal to discuss inter-provincial problems respecting the fluid milk industry around the Ottawa River.

The report of the Fluid Milk Division, the Milk Products Division and the section on milk quality cover other activities of the Board.

Bonding of Distributors and Processors

The regulations provide that distributors shall furnish security in the form of Government or Surety Bonds, for the protection of milk producers. During the fiscal year ending March 31, 1963, an amount of \$4,706,000.00 in the form of Government and Surety Bonds were on deposit with the Board. During the year, one of these bonds was called, in order to pay producers who were in arrears of payment by the distributors.

Processing plants which fail to satisfy the Board as to their financial security are also required to furnish security in the form of Government or Surety Bonds. During the fiscal year ending March 31, 1963, four plants furnished security in this form.

Head Office Fieldmen

Two fieldmen work out of Head Office supervising the work of local fieldmen and, in addition, doing audit work which includes investigating the records of distributors and processors to see that producer prices provided for in agreements filed with the Board and awards made by the Board are paid. Special investigations are also conducted to gather information on industry matters, as required. Producer, distributor and processor association officials are interviewed relative to local market problems.

Statistical data on the work performed for the fiscal year ending March 31, 1963, is as follows:

Payment Audits:

Routine and Follow-up 395
Special Audits
Errors Corrected:
Number 33
Value
Investigations 8
Special Plant Calls 147
Miscellaneous Calls:
Farm
Producer Associations 33
Distributor Associations 8
Other Calls, including Processor Associations 62
Office Calls 238
Meetings with Fieldmen 111

Classes of Producers

Producers of milk and cream have been categorized into their various classes as far as possible and have been related to the approximate amount of milk equivalent produced by each class. The following table shows 46% of butter as being produced by concentrated milk producers and 53% by cream producers.

Number of Producers and Pounds of Milk Equivalent Produced by Same in Ontario

	1961	1962	
Pro	ducers Milk	Producer	s Milk
Fluid Milk 10	,800 2,162,01	1,000 9,187	2,232,453,000
Concentrated Milk 18	1,866,56	4,000 18,526	1,913,704,000
Cheese Milk 10),532 832,00	0,000 9,341	813,436,000
Cream for Butter 32	2,013 1,182,37	4,000 28,591	1,186,566,000
Total 71	,576 6,042,93	9,000 65,645	6,146,159,000

Bulk Milk Handling and Pipeline Milking Installations

Bulk milk handling continues to increase at both the fluid and manufactured milk level. In keeping with bulk tank installations pipeline milking installations also increased.

The following table indicates the trends to bulk milk and pipeline installations:

	1960	1961	1962
Number of fluid markets having bulk milk handling	48	65	75
Number of dairies having bulk milk handling	. 107	128	138
Number of processing plants having bulk milk handling	9	13	27
Number of bulk transports (a) to dairies	264	315	336
(b) to processing plants	10	18	38
(c) total	274	323	374
Number of producers on bulk (a) fluid	6,165	6,992	7,349
(b) processing	157	280	540
(c) total	6,322	7,272	7,889
Number of producers having pipeline			
milking installations	424	520	595

Bulk Milk Transport Operators' Short Courses

Since 1955, 20 such courses have been given, 17 of which have been held at O.A.C., Guelph, two at the Kemptville Agricultural School and one at the Western Ontario Agricultural School, Ridgetown. A total of 582 operators have taken these courses.

The following courses were held in 1962:

Date	Students
O.A.C. April 23 — May 2	31
O.A.C. September 10 — 19	29

One day refresher courses for bulk operators were continued and held at various centres throughout the province. The majority of the operators endeavour to take advantage of these refresher courses.

FLUID MILK DIVISION

The Fluid Milk branch of the industry has had a very active year, its leaders taking a keen interest in developing a new approach to milk marketing problems. Early in the year the Milk Industry Board heard representation from the Ontario Whole Milk Producers' League for an upward revision in the milk fat price differential from the fixed rate of $3\frac{1}{2}$ cents per point, which had been in effect for many years. Prior to 1962 the differential was an item for collective bargaining negotiations under the Act. The request by the League was for a regulation which would provide for a uniform differential in all markets. The subject was considered at meetings with producers and distributors. Following very careful deliberation the Board ruled that henceforth the differential would not be a part of collective bargaining but would be covered by a regulation. Accordingly, Regulation 81/62 was made and became effective June 1st, 1962, setting the differential at 5 cents for each one-tenth point variation in milk fat test from the basic test of 3.4%.

The change in the differential brought in its wake collective bargaining negotiations resulting in an industry agreement to adjust the market prices paid producers to take care of the variation in the cost of fluid milk purchased by distributors. The agreement provided that there would be a market price decrease of $1\frac{1}{2}$ cents per one hundred pounds of milk, for each one-tenth point in the average test in 1961 for the market over the basic test of 3.4% milk fat and a decrease of $1\frac{1}{2}$ cents per one hundred pounds of milk for each one-tenth point in the average test for the year 1961 under the basic test of 3.4% milk fat.

Further collective bargaining negotiations on the market price took place in a move to bring more uniformity into market agreements, particularly in respect to the fluid milk products included in dairy requirements, for which the market price is paid to producers. In the parlance of the industry bargaining took place to bring markets, spoken of at "55% markets", into the group known as "100% markets", This may be explained by stating that most market agreements provided that producers be paid 100% of the milk used in fluid milk product sales. The remainder of the market agreements, a goodly number, provided that producers be paid 100% of the milk used in the sales of regular, homogenized and special milks and to some extent 2% partly skimmed milk, but only 55% of the milk used in certain fluid milk products such as buttermilk, chocolate drink and skim milk. Negotiations resulted in the majority of these "55% markets" being placed on the 100% basis, the net result being a lower market price to offset the increased volume being paid for by distributors at the top or market price.

Pursuant to Section 29 of The Milk Industry Act, distribution areas are designated on licences issued to distributors of fluid milk products. The restrictions on where a distributor may distribute or deliver milk continued, as in recent years, to be a very contentious problem. Numerous hearings by The Milk Industry Board took place to consider applications for extensions and to hear representations from producers and distributors on making larger areas of distribution. While there were differences of opinion expressed by individuals, it was apparent to the Board that the industry organizations were opposed to any easing of area restrictions. The Board continues to adhere to its policy of not making any major change in distribution areas and to continue the policy of considering each application on its merits.

New milk products have appeared on the market in recent years which are competing and will continue to compete very strongly with fluid milk products. A

product, concentrated liquid milk, which the Board has designated by regulation in 1960 as a milk product, rather than a fluid milk product, presented a real problem in 1962. Because of the inroads this product had made on the sale of fluid milk products, especially in Northern Ontario markets, the League requested the Board to reclassify concentrated liquid milk as a fluid milk product. The Board called a hearing giving all segments of the industry an opportunity to be heard. The fluid milk producers and distributors of Northern Ontario submitted briefs claiming that they were losing their market for fluid milk due to the lower prices charged for the concentrated product. They stated that the manufacturers of concentrated liquid milk had an unfair advantage because of the classification of their product as a milk product, milk utilized for same being bought at prices considerably lower than the price paid to fluid milk producers. The producers of milk utilized in the manufacture of concentrated liquid milk presented their views asking that there be no interference with their market and the Concentrated Milk Producers' Association gave support to this group. The Board conducted investigations and considered very fully the whole matter but did not alter the decision made in 1960 when it designated this new class of product "Concentrated Liquid Milk."

TOTAL PROVINCE - MILK PURCHASES

TOTAL TROVINGE										
	Standard and Special							Milk Bou		Secondary
	Fluid Mill	k Bought		Seconda	ry Milk I	Bought		n Farmer		As a % of
	Milk	Average	Total	Milk	Average	Total	Milk	Average	Total	Volume
	Bought	Price	Cost	Bought	Price	Cost	Bought	Price	Cost	Total
	000 Lbs.	Per Cwt.	\$000	000 Lbs.	Per Cwt.	\$000	000 Lbs.	Per Cwt.	\$000	Purchases
1950	1,153,312	4.14	47,798	199,688	2.42	4,827	1,353,000	3.89	52,625	
1951	1,208,490	4.27	51,658	212,707	2.94	6,258	1,421,197	4.08	57,916	
1952	1,231,033	4.69	57,750	263,095	2.79	7,346	1,494,128	4.36	65,096	
1953	1,279,601		59,460	248,856	2.40	5,984	1,528,457	4.28	65,444	
1954	1,330,700		61,044	274,715	2.39	6,573	1,605,415	4.21	67,617	
1955	1,404,362	4.56	64,105	304,351	2.45	7,453	1,708,714		71,558	
1956	1,441,452	4.57	66,407	304,076	2.54	7,722	1,745,529		74,129	
1957	1,506,471	4.81	72,407	351,771	2.80	9,841	1,858,241		82,247	
1958	1,512,067	4.95	74,780	422,759	2.80	11,855	1,934,826		86,635	
1959	1,571,668	5.01	78,691	398,929	2.67	10,645	1,970,598		89.336	
1960	1,585,249		81,790	430,052	2.61	11,228	2,015,301		93,018	
1961	1,598,008		82,449	481,650	2.54	12,225	2,079,658		94,674	
1962	1,648,711		84,971	485,770	2.54	12,317	2,134,481	4.56	97,288	3 22.8

TOTAL COMMERCIAL SALES BY LICENSED COMMERCIAL DAIRIES IN ONTARIO, YEAR 1962, EXPRESSED IN QUARTS AND ALSO AS A PERCENTAGE OF TOTAL FLUID MILK SALES

	Standard Annual Sales 000	Fluid % of Total	Special Annual Sales 000 Quarts	Fluid % of Total	Partly Sk Annual Sales 000 Ouarts	% of Total	Skim Annual Sales 000 Quarts		Total Fluid Milk Annual Sales 000 Quarts
AREA	Quarts		_		2,312	26.49	792	9.07	8,728
Brant Co.	5,545	63.53	79	.91		16.53	675	13.93	4,841
Elgin Co.	3,320	68.59	46	.95	800			4.81	27,183
Windsor	21,587	79.41	172	.63	4,118	15.15	1,306		
	11,331	88.30	51	.40	912	7.10	539	4.20	
Rem. Essex-Kent			82	.88	763	8.27	835	9.05	9,220
Lambton Co.	7,541	81.79			,	23.41	1,261	3.89	32,427
Lincoln-Welland	23,458	72.34	118	.36	7,590			6.74	
London	15,791	67.83	271	1.16	5,649	24.27	1,570	0.74	23,201

Rem. Middlesex	1,489	81.38	113	6.16	160	8.73	68	3.73	1,829
Norfolk-				0.0	4.406	45.45	005		7.000
Haldimand	5,836	80.06	2	.03	1,126	15.45	325	4.46	7,290
Oxford Co.	5,184	81.97	46	.74	747	11.81	347	5.48	6,324
Hamilton- Went Co.	35,664	75.54	747	1.58	8,857	18.76	1,944	4.12	47,212
Bruce-Grey-					0.00	0.50	505	4.00	10.641
Huron	9,847	92.54			269	2.52	525	4.93	10,641
DuffHalton-Peel	8,779	75.76	51	.44	1,939	16.73	818	7.06	11,587
Perth Co.	3,273	76.58	52	1.22	679	15.89	270	6.31	4,273
Simcoe Co.	11,446	90.07	4	.03	567	4.46	691	5.44	12,708
Waterloo Co.	13,058	69.20	224	1.19	3,600	19.08	1,989	10.54	18,870
Wellington Co.	5,319	76.16	226	3.24	975	13.96	464	6.64	6,985
Durham-North'd.	5,495	91.34		-	20	.33	502	8.34	6,016
Haliburton- Victoria	2,906	83,43	11	.30	374	10.74	192	5.52	3,483
Hastings-Pr.									
Edward	8,642	90.58	234	2.45	40	.41	625	6.55	9,541
Muskoka-Parry								4.40	# 40 0
Sound	5,161	93.96			107	1.94	225	4.10	5,492
Ontario Co.	8,735	73.26	22	.18	2,181	18.29	986	8.27	11,924
Peterborough Co.		77.36	54	.68	886	11.15	858	10.80	7,944
Toronto	133,811	70.08	2,679	1.40	41,101	21.53	13,340	6.99	190,931
Rem. York Co.	7,606	75.66	209	2.08	1,759	17.50	478	4.76	10,053
Ottawa (Carle- ton Co.)	32,391	79.08	123	.30	6,866	16.76	1,578	3.85	40,958
Dundas-Stor									
Glen.	5,694	82.81	59	.86	1,011	14.71	112	1.62	6,875
Kingston	7,450	77.09	22	.23	1,435	14.84	756	7.83	9,663
Rem. Frontenac, Len. & Ad. Co.	1,570	85.67			188	10.26	74	4.06	1,833
Grenville-Leeds									
Co.	4,712	77.16	22	.37	1,104	18.08	268	4.40	6,107
Lanark Co.	3,380	93.22	18	.50	87	2.40	141	3.88	3,626

TOTAL COMMERCIAL SALES BY LICENSED COMMERCIAL DAIRIES IN ONTARIO, YEAR 1962, EXPRESSED IN QUARTS AND ALSO AS A PERCENTAGE OF TOTAL FLUID MILK SALES (Continued)

	Standard Annual Sales 000	% of	Special Annual Sales 000	Fluid % of	Partly Sk Annual Sales 000	simmed % of	Skim Annual Sales 000	of	Total Fluid Milk Annual Sales 000
AREA	Quarts	Total	Quarts	Total	Quarts	Total	Quarts	Total	Quarts
PresRussell Co.	1,846	97.80			12	.63	30	1.56	1,887
Renfrew Co.	7,282	89.72			571	7.03	264	3.25	8,117
Manitoulin-									
Algoma	6,999	72.72	******************		2,469	25.66	156	1.62	9,624
Cochrane-Temisk.	8,177	87.77	20	.22	879	9.44	240	2.57	9,317
Kenora-Rainy									
River	4,875	95.65			121	2.37	101	1.98	5,097
Nipissing Dist.	4,366	83.54	16	.31	646	12.36	198	3.79	5,226
Sudbury Dist.	10,917	86.56			1,380	10.94	316	2.50	12,613
Thunder Bay									
Dist.	12,159	87.37	207	1.49	241	1.73	1,311	9.42	13,917
Total Province									
1962	478,788	76.43	5,981	.95	104,540	16.69	37,167	5.93	626,476
1961	481,024	78.91	7,720	1.27	84,264	13.82	36,545	6.00	609,553
1960	489,614	80.97	10,117	1.67	68,271	11.29	36,670	6.06	604,671

Price Formula for Fluid Milk

The history of the Price Formula calculations since the inception of the Formula in 1954 is given, in part, in the following Table. It will be noted in the September 1962 calculation an increase of 19 cents per 100 pounds was indicated by the formula, to become effective November 1st on milk purchased on and after November 1st. Following an announcement suspending temporarily the Price Formula for Fluid Milk, The Milk Industry Board made a regulation which continued the formula price for October, 1962, \$5.10, in effect until August, 1963. This regulation, O. Reg. 289/62, was revoked by O. Reg. 27/63 made February 8th, 1963, when it was discovered that in calculating the price of butterfat, recognition had not been given to the 12ϕ per pound federal subsidy on butter. This recognition left the formula unchanged.

PRICE FORMULA CALCULATIONS

		Three-Month	Formula
Month	Monthly	Average	Price
July '54	4.48	4.48	4.53
July '55	4.645	4.48 4.62	4.53
Aug. '56	4.716	4.66	4.53
Sept. '56	4.7238	4.6955	4.53
		4.7288	
New Basic	Price Effectiv	ve November 1, 195	66 - 4.72
July '57	4.8943	4.8903 4.9066	4.72
Aug. '57	4.9286	4.9066	4.72
Sept. '57	4.9419	4.9216	4.91
		tive October 1, 195	
Oct. '57	4.9653	4.9452	4.91
Sept. '59	5.1836	5.1570	5.10
New Basic	Price Effec	tive October 1, 195	
Oct. '59			5.10
Oct. '60	5.1659	5.1704	
Mar. '61	5.2180	5.1958	
Mar.'62		5.1799	
Sept '62	5.2301		5.10
Oct. '62	5.2350	5.2229	5.10
Mar. '63	5.2398	5.2261	5.10

LICENCES ISSUED

Year	Regular Distributor	Producer Distributor	Peddler	Milk Transporter		Shopkeeper Distributor	Total
1936	647	861	87	177	28		1,800
1937	750	924	87	205	32		1,998
1938	598	850	90	220	36		1,794
1943	610	452	125	181	43		1,411
1948	630	192	86	272	53		1,233
1953	558	84	99	247	43		1,031
1956	532	65	54	251		1	903
1959	484	48	46			1	579
1960	464	38	46			1	549
1961	465	36	35			1	537
1962	438	34	32			1	505

	Producer	Agreement		Producer	Agreement
Market	Price	Or Award	Market	Price	Or Award
Acton	$4.80\frac{1}{2}$	62-18FM	Cochrane	5.72	62-18FM
Ailsa Craig	4.81	60-5FM	Colborne	4.74	62-18FM
Alexandria	4.40	62-28FM	Collingwood	4.95	62-21FM
Alfred	4.24	60-31FM	Copper Cliff	5.60	62-10FM
Allison	$5.50\frac{1}{2}$	62-18FM	Cornwall	4.96	62-18FM
Almonte	4.15	60-33FM			
Alvinston	4.75	60-19FM	Delhi	4.74	60-7FM
Ansonville	5.50	63-3FM	Drayton	4.43	59-15FM
Arnprior	4.99	62-18FM	Dresden	5.08	62-15FM
Arthur	4.81	58-29FM	Dryden	5.39	62-18FM
Athens	4.24	A60-1FM	Dundalk	$4.79\frac{1}{2}$	62-18FM
Aurora	4.95	62-3FM	Dundas	5.15	57-33
Aylmer	4.58	62-18FM	Dunnville	4.90	62-27FM
•			Durham	4.82	62-18FM
Bancroft	4.60½	62-18FM	T 211	5.05	(0.405)
Barrie	5.00		Eganville	5.07	62-18FM
Barry's Bay	4.62	62-18FM		5.40	62-1FM
Beamsville	$5.05\frac{1}{2}$	62-6FM	Elmira	4.82	62-18FM
Beeton	4.32	58-21FM		4.62	59-2FM
Belleville	4.93	57-10	Englehart	5.40	62-1FM
Blenheim	4.87	57-32	Erin	4.72½	62-18FM
Blind River	5.88	58-31FM		5.62	62-35FM
Bloomfield	4.67	57-31	Essex	5.03	62-5FM
Blyth	4.78	A62-4	Exeter	4.78	A62-5
Bobcaygeon	4.24	A60-5FM	Elliot Lake	5.62	62-35FM
Bolton	4.83	62-25FM	Fenelon Falls	4.24	A 60 5EM
Bowmanville	$4.92\frac{1}{2}$	62-18FM	17	4.24 $4.80\frac{1}{2}$	A60-5FM
Bracebridge	5.10	62-18FM	Fergus Forest	5.10	62-18FM
Brampton	5.00	54-28	Fort Erie	5.15	58-36FM
Brantford	4.80	A62-4FM	Fort William	5.13	61-3FM 62-13FM
Brockville	4.82	62-19FM		5.20	54-1
Brussels	4.78	A62-5	Fort Frances		
Brigden	5.10	59-1FM	Frankford	4.63	62-18FM
Brighton	4.74	62-18FM	Galt	4.96	62-32FM
Burford	4.77	62-18FM	Gananoque	4.97	62-18FM
Burks Falls	5.06	62-9FM	Georgetown	4.96½	62-18FM
Caledonia	5.00	62-14FM	Geraldton	5.80	53-45
Carleton Place			Glencoe	4.81	58-38FM
Campbellford	4.81		Goderich	4.78	A62-5
Capreol	5.60		Grand Valley	4.62	57-6F
Chalk River	5.10	60-30FM		5.10	62-18FM
Chapleau	6.12	58-20FM		$4.97\frac{1}{2}$	62-18FM
Chatham	5.08	62-15FM	Gueiph	7.71/2	02-101-W
Chatsworth	4.62		Hagersville	4.65	59-13FM
Chesley	4.78	A62-5	Haileybury	5.40	62-1FM
Chesterville	4.09		Haliburton	4.97	59-3FM
Clinton	4.78	A62-5	Hamilton	5.06½	62-4FM
Cobourg	5.00		Hanover	4.62	60-13FM
Cooding	5.00	02-101 WI	Tanovei	7.02	003131.101

	Producer	Agreement		Producer	Agreement
Market	Price	Or Award	Market	Price	Or Award
Harriston	4.62	59-15FM		4.771/2	62-18FM
Hastings	4.62		Morrisburg	4.20	62-18FM
Hawkesbury	4.79		Mount Brydges	4.75	60-19FM
Havelock	4.58	62-18FM	Mount Forest	4.62	60-14FM
Hensall	4.78	A62-5FM	N	7 00	(0.1077)
Hespeler	5.00	54-28	Napanee	5.00	62-18FM
Huntsville	5.09	62-18FM	New Hamburg	4.69	60-8FM
Hanmer	5.60	62-10FM	New Liskeard	5.40	62-1FM
Ingersoll	4.95 1/2	62-18FM	Newmarket	5.00	54-37
Iroquois Falls	5.50	63-3FM	Niagara Falls Niagara-on-the	5.05½ -Lake	62-6FM
Kapuskasing	5.73	62-18FM	1 Tagara-on-the	5.05½	62-6FM
Kemptville	4.11	62.18FM	Nipigon	5.69	57-34
Kemptville	5.19	61-8FM	Noelville	5.19	57-29
Kincardine	4.78	A62-5	North Bay	5.35	62-18FM
Kingston	4.81	62-31FM	Norwich	4.69	55-33FM
Kingsville	5.03	62-5FM	Norwood	4.62	58-23FM
Kirkland Lake	5.40	62-31 M	110111000		
Kitchener Kitchener	4.79	62-11 M	Oakville	$5.09\frac{1}{2}$	62-18FM
Kitchener	4.79	02-291 11	Oil Springs	4.79	60-21FM
Lakefield	4.68	62-18FM	Orangeville	4.79	62-18FM
Lanark	4.00	60-34FM	Orillia	$4.93\frac{1}{2}$	62-18FM
Lancaster	4.40	62-28FM	Orono	4.60	60-25FM
LaSalle	5.07	62-16FM		4.97	62-18FM
Leamington	5.07	62-16FM		5.07	62-17FM
Levack	5.60		Otterville	4.69	55-33FM
Lindsay	$4.98\frac{1}{2}$	62-18FM	Owen Sound	4.84	63-1FM
Lion's Head	4.78	A62-5FM	Paisley	4.78	A62-5
Listowel	4.80	62-18FM	Palmerston	4.62	59-15FM
Little Current	5.62	62-35FM	Parham	4.24	59-20FM
London	4.97	62-12FM	Paris	4.79	62-33FM
Lucan	4.50	60-35FM	Parkhill	4.81	60-5FM
Lucknow	4.78	A62-5	Parry Sound	5.08	62-18FM
L'Original	4.73		Pembroke	$5.08\frac{1}{2}$	62-18FM
Madoc	4.43	59-19FM	Penetang	4.80	A62-2FM
Markdale	4.58	59-12FM	Perth	4.43	62-18FM
Markham	$4.79\frac{1}{2}$	62-18FM	Peterborough	$4.98\frac{1}{2}$	62-18FM
Marmora	4.43	59-19FM	Petrolia	5.10	62-18FM
Massey	4.62	62-35FM	Plantagenet	4.24	60-9FM
Matheson	5.62	57-42	Port Arthur	5.40	62-13FM
Mattawa	5.19	59-4FM	Port Colborne	5.15	62-34FM
Meaford	5.00		Port Dalhousie		62-6FM
Midland	4.80	A62-2FM	Port Dover	4.62	60-7FM
Milford Bay	5.10	58-5FM	Port Elgin	4.78	A62-5
Millbrook	4.81		Port Hope	5.00	62-18FM
Mildmay	4.78	A62-5FM	Port McNicoll	4.81	60-4FM 58-37FM
Milton	4.98	62-7FM	Port Perry	4.81 5.06	62-9FM
Milverton	4.43	60-23FM	Powassan	5.00	02-71 IVI

	4.04	(0.10E) (TT	4.24	59-20FM
Prescott	4.81		Tamworth	4.24 4.78	39-20FM A62-5FM
Preston	4.95	62-18FM	Tara		62-18FM
Picton	4.67	57-31FM	Tavistock	4.21½	
m ! m!	5.10	50 17TM	Teeswater	4.78	A62-5
Rainy River	5.10		Temiskaming	5.40	62-1FM
Renfrew	4.98	62-18FM	Thamesville	4.86	58-34FM
Richmond	4.96		Thessalon	5.88	A57-5
Ridgetown	5.08	62-15FM	Thornbury	4.81	58-39FM
Ridgeway	5.15	61-3FM	Thorold	5.15	A54-3
Ripley	4.78	A62-5	Tilbury	5.15	56-8
Rockland	3.80		Tillsonburg	4.74	60-7FM
Russell	4.20	61-4FM	Timmins	5.55	62-26FM
	~ OO	(0.10E) (Tobermory	4.81	A57-3
Sarnia	5.09	62-18FM	Toronto	5.07	A61-2FM
Sault Ste. Marie		62-18FM			40 40-74
Seaforth	4.78	A62-5	Uxbridge	4.80	62-18FM
Shelburne	4.62	59-16FM	X7 11 1 XX'11	4.40	(2 20E) (
Simcoe	4.74	62-20FM	Vankleek Hill	4.40	62-28FM
Sioux Lookout	5.40	60-1FM	Verner	5.38	62-30FM
Smiths Falls	4.80	62-18FM	Victoria Harbo	ur 4.80	A62-2FM
Smithville	$5.05\frac{1}{2}$	62-6FM	Walkerton	4.78	60 FEM
Southampton	4.78	A62-5FM		4.78 5.08	62-5FM
South River	5.06	62-9FM	Wallaceburg Waterford	4.81	62-15FM
Stayner	4.95	62-21FM	Waterloo	4.81 4.79	57-4F
Stoney Creek	5.15	57-33			62-29FM
Stouffville	4.81	58-25FM	Welland	5.05½ 4.68	62-6FM
Stratford	$4.94\frac{1}{2}$	62-18FM	Wellington		57-31FM
Strathroy	$4.91\frac{1}{2}$	62-18FM	Waterdown	5.05½ 4.24	57-33 A60-4FM
Stirling	4.63	62-18FM	Westport	5.08	62-15FM
Sturgeon Falls	5.38	62-30FM	Wheatley Whitby	4.95½	62-23FM
Sudbury	5.60	62-10FM	Wiarton	4.9372	A62-5
Sundridge	5.06	62-9FM	Winchester	4.78	60-29FM
Sutton West	4.96	62-11FM	Windermere	$5.09\frac{1}{2}$	62-18FM
St. Catharines	$5.05\frac{1}{2}$	62-6FM	Windsor	5.0972	62-16FM
St. Thomas	4.78	62-8FM	Wingham	4.78	A62-5
St. George	5.00	59-14FM	Woodstock	4.78 $4.95\frac{1}{2}$	62-18FM
St. Jacobs	4.60	58-24FM	· WOOdstock		
St. Marys	5.00	54-28	Zurich	4.76	A59-1

MILK PRODUCTS DIVISION

This division supervises the production of milk and cream used for the manufacture of milk products other than fluid milk products, including the three dairy producer marketing plans. The milk and cream quality and farm service extension program is supervised by the Associate Director of Dairying and is reported under that section.

The Dairy Producers' Marketing Plans

Three marketing plans operate under The Milk Industry Act, namely; The Ontario Cheese Producers' Marketing Plan, The Ontario Concentrated Milk Producers' Marketing-for-Processing Plan, and The Ontario Cream Producers Marketing-for-Processing Plan. The general activities of the respective local boards operating under these plans are as follows:

Cheese Producers' Marketing Plan

The Ontario Cheese Producers' Marketing Board operates under this Plan and the local Board consists of seven members. Each of six districts in the Province elects a representative to the Marketing Board for a three-year term, arranged so that every year two districts elect their members. The seventh Board member is appointed each year by the six elected representatives.

Since June 26th, 1958, Ontario Cheese Producers' Co-Operative Limited has held a Cheese Buyers Licence and the regulations were changed at that time to permit this procedure. The Cheese Producers Organization purchases cheese on the Belleville and Stratford Exchanges the same as other licenced buyers. The Co-operative purchased slightly over 17 million pounds of cheese from the 1962 production for export to the United Kingdom. During 1962, the Co-operative purchased some 1961 cheese from the Canadian trade for export to Great Britain because of the shortage of the product on that market.

The Agricultural Stabilization Board increased the support price for cheese one-half cent to 32½ cents for the period May 1st, 1962 to April 30th, 1963. The 25 cents per hundredweight subsidy payment was continued on milk delivered to Cheese Factories excluding any surplus milk from Whole Milk Products. No change was made in the negotiated price of 32 cents per pound, f.o.b. approved warehouse, as established under agreement number 59/2MP dated May 12th, 1963. The Ontario Cheese Producers Co-Operative Limited maintained the price of cheese considerably higher than the floor throughout the grass season and a price of 37¾ cents was maintained for several weeks. The price of cheese was reduced gradually during the fall months beginning on the exchange of December 13th, 1962 when a price of 36¼ cents was paid. December cheese was reduced to 35 cents and this price continued for several weeks. During the winter of 1963 the price held at 35 to 35% cents.

The Agricultural Stabilization Board has amended its regulations regarding the tender of cheese as follows:

"Cheese shall be tendered to the Board within the three weeks of grading and weighed by an Official Weigher within two weeks prior to the date of tender." This means that the Agricultural Stabilization Board is prepared to accept cheese within three weeks of any grading, whether original or not.

Amendments were made to the Canada Dairy Products Act, July 11, 1962 which permitted the export of Cheddar Cheese to the United Kingdom without mandatory regrading. Regulations regarding the wording on the Grade Certificate were changed and the following substituted: "This certificate indicates the quality of the cheese on the date graded." The Ontario Cheese Producers' agreed with the Minister of Agriculture that they would guarantee the quality of cheese exported to the United Kingdom manufactured during 1962. No complaints on quality nor payment of claims has been made on 1962 produced cheese.

The removal of the regrading regulation has greatly assisted in the export

movement of Ontario Cheese and has allowed a higher price to be paid to the farmers. 1962 was a record year for continued high prices and many factories paid considerably over \$3.00 throughout the summer months for cheese milk.

An increased domestic consumption during the past year, has depleted stocks of Cheddar Cheese at March 1st to the lowest level in several years. There is a growing demand in England for Ontario Cheese and the Ontario Cheese Producers' were unable to completely fill the orders during 1962. The export market to the United Kingdom looks very bright for 1963 and with increased consumption at home and low storage stocks, everything indicates high prices for the coming season.

The number of cheese buyers' licences issued in 1960 was 37, in 1961 was 35, and in 1962, 30.

The Ontario Concentrated Milk Producers' Marketing-for-Processing Plan

The Ontario Concentrated Milk Producers' Marketing Board operates under this plan as the local board. During the twelve month period April 1st, 1962 to March 31st, 1963, two price agreements were negotiated and two Awards were handed down by The Milk Industry Board.

January 30, 1962, Agreement 62-IMP.

March 30, 1962, Agreement 62-2MP.

May 10, 1962, Award 62-1MP.

March 5, 1963, Award 63-1MP.

In addition to negotiated price and the Award price, producers shipping to a Concentrated plant received 25 cents per cwt. Federal subsidy.

Agreement Number Effective Date	62-1MP Feb. 1, 62	62-2MP Apr. 1,62	Award 62-1MP May 1,62	Award 63-1MP Mar. 16, 63
For the manufacture of:				
(a) Domestic spray and casein and roller powder				
and butter	2.35	2.35	2.35	2.63
*Casein and butter	2.45	2.45		
(b) Domestic whole milk roller and spray powder	2.70	2.70	2.70	2.75
(c) Other than domestic whole milk powder and evoporated milk case	2.10	2.70	2.70	2.13
goods	2.50	2.50	2.50	2.50
(d) Milk going into all				
other products	2.68	2.68	2.75	
(e) Domestic evaporated and condensed milk				
packed in cases	2.78	2.78	2.78	2.78
(f) Concentrated liquid				
milk	3.25	3.25	3.25	3.25

^{*} Award 62-1MP combined categories (a) and (c).

Clauses "a," and "d" were subject to the butter escalator clause whereby the minimum price increased or decreased at the rate of 4.2 cents per hundred pounds of milk as the price of butter in Toronto increased from 60 cents per pound. Accordingly the following half monthly changes to May 1, 1962 were based on the escalator clause made on the minimum prices in the clause affected in the above. Effective May 1, 1962 the escalator clause has been removed from the Award as a basis of arriving at prices.

Jan. 1-15		15¢	increase on	average	non-	-tenderable	butter price of	63.50¢
Jan. 16-31				"	22	29	29	63.31¢
Feb. 1-15		9ϕ		22	22		99	62.22¢
Feb. 16-28		8¢		"	29	22	27	61.88¢
Mar. 1-15		8¢		22	"	"	99	61.94¢
Mar. 16-31		9¢		22	22	99	27	62.12¢
Apr. 1-15	• • • • • • • • • • • • • • • • • • • •	9ϕ		"	22	99	22	62.08¢
Apr. 16-30		7ϕ		,,	22	22	22	61.75¢

Cream Producers' Marketing-for-Processing Plan

The Ontario Cream Producers' Marketing Board operates under this plan as the local Board. While a negotiating committee is set up to negotiate minimum prices for cream for processing into butter, it has not yet filed an agreement, although for the past five years has unofficially agreed to a minimum price for first grade fat picked up at the farm at the same price as that set for the floor price on butter and the stabilization Board payment. Butter floor price for the 1962-63 year was 51 cents for 92 score and 52 cents for 93 score plus 12 cents per lb. stabilization payment.

The 3/10 cent licence fee collected by the group is largely utilized for advertising purposes. The trend of cream producers diverting to milk shipping is not as prevalent as it has been in the past few years.

Plant Licences

All plants manufacturing milk products which are not designated as fluid milk products require a licence to operate under The Milk Industry Act and the Regulations. Also such plants, in addition to meeting all other requirements of the Regulations, must satisfy the Board as to their financial responsibility in making payments to producers for milk and cream which they purchased.

All plants which have been issued their licence in 1962 have satisfied the Board as to their financial responsibility.

Plant Licences Issued	1960	1961	1962
Creameries only	125	124	117
Cheese Factories only	154	146	139
Processing Plants only	89	96	92
Milk Receiving Stations only	24	26	24
Cream Receiving Stations only	6	6	9
Combined Creameries & Cheese Factories	6	9	7
Combined Creameries & Milk Separating Plants	2	4	1
Combined Creameries & Processing Plants	35	26	33

Combined Creamery & Milk Receiving St	ation	1	-	1
Combined Cheese Factory & Processing		3	6	5
Combined Cheese Factory, Creamery & P	rocessing	-	~	_
Plant	C4 - 4*	7	5	5
Combined Chasse Factory & Milk Receivi	_	3	3	7
Combined Cheese Factory & Cream Receiving Cream Receiving Cheese Factory, Cream Receiving Cream Receiving Cream Receiving Cheese Factory & Cream Receiving Cheese Fac	_	1	-	7
and Processing		1	_	_
Combined Cheese Factory, Processing, M				
separating & Milk Receiving Station		1	1	-
Combined Processing & Milk Receiving Sta	1	1	1	
Combined Cheese Factory, Cream Receiving		4	4	
& Milk Receiving Station		1	1	1
Combined Cheese Factory and Milk Separ Combined Cream Receiving Station & Pro-	1 3	1	1	
Combined Cream Receiving Station & From Combined Cream Receiving Station, Milk		3	1	1
and Milk Separating Plant		1	_	_
Combined, Creamery, Cream Receiving, M.				
Receiving and Milk Separating		-	-	1
Combined Milk Receiving and Milk Sepen		-	-	1
Combined Processing Milk Separating and				1
Receiving		-	-	1
		465	455	446
Production Statistics				
Creamery Butter	95,036,000 lb	. 10	1,286,00	1b
Cheddar Cheese	67,079,000		,691,700	
Other Cheese (not including cottage)	7,760,000		,021,000	
Cottage Cheese (including creamed)	7,356,000		,593,090	
Ice Cream Mix (Gals.)	15,756,000	16	,340,000	
Concentrated Milk Products				
Condensed Whole Milk	13,934,000 1b	. 15	,480,000	lb.
Evaporated Whole Milk	121,858,000		,904,000	
Powdered Whole Milk	24,875,000		,542,000	
Condensed Skim Milk	939,000		817,000	
Dry Skim Milk (Spray Process)	79,521,000		,843,000	
Dry Skim Milk (Roller Process)	15,364,000		,859,000	
Dry Buttermilk	4,407,000		,083,000	
Miscellaneous Whole Milk By-Products				
(including malted milk, partly-				
skimmed, evaporated milk, etc.)	21,991,000	22	,890,000	
Miscellaneous By-Products (including evaporated skim milk, lactose, casein,				
multi-skim milk, etc.)	19,040,000	21	,820,000	
	, -,		, , ,	

Of the total production in Canada, Ontario produced 57% of the cheese compared with 23.60% in 1960; 26.8% of the creamery butter compared with 23.6% in 1960; 45.6% of the concentrated milk products compared with 44.7% in 1960 and 36.8% of the ice cream mix compared with 37.4% in 1960.

Some 6,506,246 lbs. of milk were produced in Ontario in 1961, 6,264,621 in 1960 and 6,621,194 lbs in 1962.

Ontario produced 33.7% of the total Canadian Milk production, the same as in 1960 — Canada 19,277,755.

The approximate farm value of the milk used for the manufacture, distribution or farm use is as follows:

	1960	1961	1962
Creamery Butter	47,361,000	51,846,000	55,060,000
Factory Cheese	18,198,000	17,790,000	19,199,000
Other Cheese	2,363,000	2,245,000	2,440,000
Ice Cream	6,192,000	6,166,000	5,092,000
Concentrated Whole Milk			
Products	15,884,000	14,843,000	13,568,000
Total Fluid Milk and Cream			
Sales	95,434,000	95,727,000	98,849,000
Farm Consumed etc.	19,213,000	18,636,000	20,514,000
Total Farm Value	\$204,645,000	\$207,253,000	\$214,722,000

Approximately 92% of the total milk production in Ontario is received at the plants.

Milk (including cream converted to milk) produced in Ontario was utilized as follows:

ionovis.	'000' lbs.
Total Milk Production in Ontario	6,621,194
Creamery Butter	2,359,328
Farm Butter	7,138
Total Butter	2,366,466
Cheddar Cheese	722,480
Other Cheese	90,956
Total Cheese	813,436
Concentrated Milk Products	506,475
Ice Cream Mix	220,664
Fluid Milk Sales	1,874,669
Fluid Cream Sales	357,784
Total Fluid Milk and Cream Sales	2,232,453
Farm home consumed	212,300
Fed to Livestock	269,400

STATISTICAL SUMMARY OF PLANTS MANUFACTURING MILK PRODUCTS INCLUDING MILK AND CREAM RECEIVING STATIONS

1960	1961	1962
98	150	134
27	26	30
90	94	101
150	145	146
	98 27 90	98 150 27 26 90 94

Plants making whey butter	68	61	62
Plants making dry milk	38	38	31
Plants making evaporated or condensed	16	12	10
Plants making ice cream and ice cream mix	149	114	101
Plants making casein	3	8	9
Plants making miscellaneous products	20	20	26
Number of Cream Producers	34,157	32,013	28,591
Number of milk producers (cheese)	10,122	10,532	9,341
Number of milk producers (concentrated)	21,169	18,231	18,526
Average pounds milk to make a pound of cheese	11.21	11.20	11.14
Average price first grade cream (milk fat at farm)	63.60	63.29	63.36
Average price first grade butter (solids)	62.64	62.50	54.74
Average price cheddar cheese per pound	32.94	33.43	34.70
Average price evaporated milk per pound			
case goods	13.33	13.33	13.33
Average price dry skim milk per pound			
(spray process)	9.68	8.57	8.41
Average price dry skim milk per pound	0.71	7.07	7.50
(roller process)	8.71	7.07	7.50
Average price dry skim milk per pound (animal feed)	7.40	5.34	6.52
Average price dry whey per pound	5.19	4.58	4.30
Average price dry buttermilk per pound	7.05	5.18	5.64
Average price dry casein per pound	23.71	21.83	19.85
Average price sweet cream per pound milk fat	84.42	82.95	82.67
Average price sweet cream per pound mink lat	04.42	02.93	02.07

Certificates for Buttermakers and Cheesemakers

All plants making butter and cheese in Ontario are required to have a person holding a certificate as a buttermaker in charge of their buttermaking operations and a person holding a certificate as a cheesemaker in charge of the cheesemaking operations.

Buttermakers' Certificates Issued

	First Class	Second Class	Temporary	Beginner	Total
1960	160	8	2	21	191
1961	151	8	9	12	180
1962	88	71	7	4	170

Cheesemakers' Certificates Issued

	Variety	First Class	Second Class	Temporary	Beginner	Total
1960	10	87	55	10	14	176
1961	19	80	50	9	11	169
1962	19	77	63	7	4	170

Quality of Milk Products

Federal grading standards are set up by regulation for butter, cheese and skim milk powder and the largest percentage of these three products is graded.

Federal Grading of Ontario Butter

	Total Pounds Graded	% First Grade	% Second Grade	% Third Grade	% Below Third Grade	% Scoring 93 Points or Higher
1960	63,613,304	96.66	3.02	0.20	0.12	22.51
1961	91,916,635	93.36	6.22	0.29	0.13	18.48
1962	98,843,000	95.43	4.20	0.29	0.08	23.33

Compulsory Federal grading of creamery butter in Ontario became mandatory in 1961 according to regulations under the Farm Products Grades and Sales Act.

Federal Grading of Ontario Cheese

	No. Pounds Graded	% First Grade	% Second Grade	% Third Grade	% Below Third Grade
Eastern Ontario	42,507,000	89.28	10.41	0.30	0.01
Central Ontario	11,786,000	94.05	5.73	0.19	0.03
Northern Ontario	303,000	76.37	23.51		0.12
Western Ontario	5,239,000	95.14	4.83	0.03	armount
Southern Ontario	4,501,000	93.95	5.92	0.13	
Totals 1960	66,883,000	91.62	8.11	0.24	0.03
Totals 1961	63,931,000	90.37	9.40	0.22	0.02
Totals 1962	64,336,000	90.90	8.85	0.24	0.01

As the Federal Government, under the Cheese and Cheese Factory Improvement Act, pays a quality premium on high scoring cheese at the rate of 1ϕ per pound for 93 score and 2ϕ per pound for 94 score and higher, the following gives these quality scoring summaries for Ontario cheese in 1961 and 1962.

	% 94 Score	% 93	% 92	% Below 92 Score
	and higher	Score	Score	(Under First Grade)
1960	26.44	38.22	25.10	10.24
1961	25.04	38.14	26.04	10.78
1962	23.85	41.30	25.21	9.64

According to cheese grading reports, cheese quality was very similar to that of 1961, with a slight increase in high scoring cheese and a slight decrease in second grade. Some flavour problems were encountered but mechanical defects were lower indicating an improvement in manufacturing technique.

Federal Grading of Edible Dry Skim Milk in Ontario

	Total Pounds Graded	% First Grade	% Second Grade	% Below Second Grade
1960	40,618,600	90.7	5.1	4.2
1961	43,874,670	92.0	5.2	2.8
1962	50,204,000	90.6	6.3	3.1

Grading of edible skim milk powder was higher for 1962 compared to 1961 and competition for milk remained keen throughout the 1962 season. Powder prices improved as the season advanced.

Butter Quality Competitions and Exhibition Butter

1962 was the 18th consecutive year that these competitions were held and 106 Creameries participated, compared to 158 in 1961 and 70 in 1960. The large increase of participating creameries was due to compulsory grading of all butter, and all creameries were automatically entered in the competition.

The competition will increase in value as more creameries take advantage of the yeast and mould service. Thanks go to the Ontario Creamerymen's Association, The Ontario Cream Producers' Marketing Board, and the dairy equipment and supply companies for their support in this competition.

Supervision of the competition was under the direction of the Milk Products Division of the Ontario Dairy Branch in co-operation with the Department of Dairy Science, Ontario Agricultural College, and the Dairy Division, Canada Department of Agriculture.

The Grand and Reserve Champions in each of the competitions in 1962 were:

1. OUALITY

The Borden Company Limited, Kemptville Ault Milk Products Limited, Winchester

2. YEAST AND MOULD

Barrie Creamery Limited, Barrie Canada Packers Limited, Shelburne

3. WORKMANSHIP

Stacey Brothers Limited, Mitchell Middlesex Creameries Limited, London

4. COMBINED QUALITY, YEAST AND MOULD, AND WORKMANSHIP

Stacey Brothers Limited, Mitchell Forest Co-Op Creamery, Forest

5. CREAMERIES MAKING THE MOST OVERALL IMPROVEMENT

Forest Co-Op Creamery, Forest Pembroke Creamery Limited, Pembroke Harwood Co-Op Creamery, Harwood

6. NOVICE COMPETITION

Meaford Creamery, Meaford Douglas Creamery, Douglas Holstein Creamery, Holstein

7. HIGHEST SCORING BUTTER (Cream Receiving Creameries)

Canada Packers Limited, Fort Frances Palmerston Creamery, Palmerston Kingston Creamery, Kingston

8. HIGHEST SCORING BUTTER (Milk Receiving Creameries)

The Borden Company Limited, Kemptville Teeswater Creamery Limited, Teeswater Cow and Gate (Canada) Limited, Gananoque

9. GREATEST INCREASE IN HIGH SCORING BUTTER (Milk Receiving Creameries)

Forest Co-Op, Creamery, Forest Kingston Creamery, Kingston Kemptville Creameries, Kemptville

10. GREATEST INCREASE IN HIGH SCORING BUTTER (Cream Receiving Creameries)

New Dundee Co-OP Creamery, New Dundee Cow and Gate (Canada) Limited, Gananoque United Dairy and Poultry Co-Op, Renfrew

11. EXHIBITION BUTTER (Creameries Winning most Prizes at the C.N.E. and the Royal Winter Fair)

New Dundee Co-Op, Creamery, New Dundee The Mohawk Creamery, Brantford

Cheese Competitions and Exhibitions

Major competitive cheese exhibitions were held by the C.N.E., Royal Winter Fair, Ottawa Winter Fair, British Empire Cheese Show, Belleville, and the Dairymen's Association of Western Ontario, and also World Contest at Green Bay, Wisconsin, Royal Dairy Show, London, England.

Ontario Cheesemakers again captured high honours at these exhibitions. Evelyn Cheese, Thamesford, scored 96.33 at the World Championship Cheese Contest at Greenbay, and they also received reserve placing, Class 18, at the Royal Dairy Show, London, England.

The Major Trophy winners in the Provincial Cheese Competitions in 1962 were:

- THE GARNET BAIN MEMORIAL TROPHY awarded to the Cheese-makers' Association whose members made the highest percentage of extraneous matter free cheese:
 Western Ontario Cheesemakers' Association.
- FRANK HEARNS MEMORIAL TROPHY awarded to the cheesemaker winning the most and highest prizes at the major cheese exhibitions: Max Frehner, Old Cherry Hill Cheese.
- 3. G. G. PUBLOW MEMORIAL TROPHY awarded to the cheesemaker with the highest rating for plant sanitation and operation:
 Grant Hughes, Selby.
- 4. J. P. GRIFFIN MEMORIAL SHIELD awarded to the Cheesemakers' Association making the highest percentage of First Grade Cheese: Central Ontario Cheesemakers' Association.
- JOHN H. ECKLIN MEMORIAL TROPHY awarded to the cheesemakers making the highest scoring cheese in Central or Eastern Ontario: Grant Hughes, Selby.

General

Plants manufacturing milk products have continued to show improvement in equipment and construction. There is still a trend towards consolidation into larger plants. New and modern plants are being constructed to replace old buildings and several are in the process of being remodelled. Two amalgamations were completed during 1962 and one new plant was built without Government Assistance.

The smaller plant is experiencing difficulty in competing under present day conditions. This is particularly true with the small cream receiving creameries.

Manufacturing costs are still increasing in all processing plants, and the cheese industry is still experiencing a great deal of difficulty in obtaining qualified help. The cheesemakers coming from Europe are more experienced in foreign type cheese manufacture and, as a result, there is an increased quantity of this type of cheese being manufactured. This cheese is finding a ready market in Canada. Thirty plants are making a variety of fancy cheese.

The quality of milk products has received strict attention by the field staff of the Dairy Branch. Due to rigid inspection, complaints on cheese exported to the U.K. have been negligible, and a strong demand is anticipated for 1963 Ontario make.

As compulsory butter grading is now being enforced, creamery operators are paying more attention to grading regulations. A cream quality Committee has been established and is functioning.

Two cheese factories burned during 1962, and four creameries ceased to operate permanently. Four cheese plants closed permanently during 1962.

Several cheesemakers' clubs, two buttermakers' clubs, three dairymens' clubs and two milk sanitarians' associations operated in the province during 1962.

Bulk haulage of milk is practised at a number of cheese factories and processing plants throughout the province. No processing plants are 100% bulk haulage, but the larger producers are gradually converting to this type of milk production.

Summary of Activities of Dairy Branch Fieldmen	1960	1961	1962
Number of fermentation tests made on cheese milk	3,225	2,386	2,043
Number of samples of milk tested for milk fat	32,421	24,822	22,908
Number of samples of cream tested for milk fat	11,693	8,224	7,485
Number of meetings attended	920	846	628

Milk and Cream Quality

Over the past year the Dairy Branch has made considerable progress towards meeting its responsibilities in taking over the supervision of fluid milk production in Ontario. The target date for completion of this project is January 1st, 1964.

The Dairy Branch staff has been under considerable pressure in taking the supervision of fluid milk production over from the Health Department along with their regular duties. In addition, a concerted effort was made in 1961 and 1962 to improve the quality of milk being produced for manufacturing plants. With the cooperation of the Department of Health, milk samples from producers to manufacturing plants were tested each month for quality. Producers of low grade milk were advised as soon as possible by mail. As time and staff permitted, producers of low grade milk were visited by Dairy Branch Fieldmen and assistance given to improve the milk supply. In the Fall of 1962, laboratory facilities were established in Guelph at the Department of Dairy Science and in Kemptville at the Kemptville Dairy School for running quality tests on milk for manufacturing. Pilot programs for milk quality with respect to milk for manufacturing were started in Dundas,

Leeds and Grenville counties in Eastern Ontario. These counties were serviced by the laboratory located at the Kemptville Dairy School. Prince Edward, Hastings and Northumberland counties were under a pilot program for Central Ontario serviced by the Department of Agriculture from Brighton and the Peterborough Health laboratory in Peterborough. Waterloo and Wellington counties are under a pilot program in Western Ontario and serviced by the laboratory located at the Department of Dairy Science, Guelph. Under arrangements made with Departments of Agriculture and Health, the majority of producers to manufacturing plants in Ontario are having their milk tested for quality on a once a month basis in laboratories of the Departments of Health and Agriculture. It is the aim of the Dairy Branch to report the quality of milk to each producer regardless of grade, once each month as soon as arrangements can be made.

A renewed interest has been indicated in the quality of cream being produced throughout the province. Supervision of cream quality and enforcement of the cream grading regulations has received less attention due to reorganization of field staff together with added responsibilities. There is need for improvement in cream quality. The present cream grading regulations need to be enforced and the conditions under which poor quality cream is produced on the farm must be improved or the producer should be excluded from the market.

The following counties and municipalities came under the supervision of the Dairy Branch in 1962 with respect to supervision of fluid milk production.

		FS

Northumberland Durham Bruce

MUNICIPALITIES

Sault Ste. Marie Elliott Lake Copper Cliff Sturgeon Falls Windsor Hamilton

Milk Quality Flavour

Flavour is considered to be the most important characteristic of milk. The Dairy Branch field staff spends considerable time training prospective graders of milk and cream. With the increase in bulk tank installations, more and more responsibility for the grading of milk for flavour falls on the bulk tank hauler. It is expected that improved training facilities for milk graders will be available this coming year at Guelph and Kemptville.

Cans of milk graded for flavour by Dairy Branch Fieldmen - 1962.

	Total Cans Graded	Cans Rejected
Fluid	36,973	559
Processing	108,353	266
Cheese	106,323	803

Sediment

Dairy Branch fieldmen supervise sediment testing of milk throughout the Province. Sediment tests on fluid milk are required to be taken once each month. A satisfactory method of taking sediment tests from bulk tank milk has not been devised at this time. Sediment tests must be taken on milk for manufacturing twice a month.

The following percentages were taken from sediment tests supervised by fieldmen of the Dairy Branch:

		Grade A		Grade B		Grade C		Grade D	
No. Samples,	1962	1962	1961	1962	1961	1962	1961	1962	1961
Fluid 3	,869	74.3	62.8	22.5	33.2	2.8	2.7	0.4	1.2
Processing 11	,711	36.7	36.9	46.3	47.6	9.9	10.6	7.0	4.9
Cheese 10	,960	35.0	35.3	47.9	47.1	13.8	13.2	3.3	4.3

Bacterial Activity

The majority of tests for bacterial activity are run in the Department of Health laboratories or in the Department of Agriculture laboratories at Guelph and Kemptville. All sampling is done under the supervision of Dairy Branch fieldmen. Transportation of samples is the responsibility of the Dairy Branch. Producers of low grade milk are warned and if no improvement takes place in the milk supply, the producer may receive notice to shut off. Assistance is available to producers with problems of milk production through Dairy Branch fieldmen, plant fieldmen as well as producer fieldmen.

Dairy Branch fieldmen supervised the taking and transporting of milk samples for bacterial activity tests.

		Fluid		Processing		Cheese		
Number of samples, 1961		37,141	37,141		26	31,754		
Number of samples, 1962		48,692		141,619		50,170		
Grade 1		Grade 2		Grade 3		Grade 4 %		
	1962	1961	1962	1961	1962	1961	1962	1961
Fluid	88.4	82.5	7.0	9.9	3.4	5.5	0.4	1.2
Processing	38.7	26.1	20.4	20.4	19.7	20.5	21.1	33.1
Cheese	39.5	41.3	22.8	22.0	19.6	17.6	18.1	19.2

Cream Quality

Dairy Branch fieldmen supervise the grading of cream in plants. A total of 32,727 cans were graded during the past year.

	% Special Grade	% 1st Grade	% 2nd Grade	% Reject Cream
1962	8.74	87.73	3.46	0.07
1961	7.87	88.60	3.44	0.09

Farm Visits

Dairy Branch fieldmen made the following calls on producers in the interests of milk quality. The premises of producers to fluid and manufacturing plants are required to meet certain standards with respect to facilities and sanitation. Failure to meet these standards may result in a "shut off."

	Total Far	m Visits	Shu	t Offs
	1962	1961	1962	1961
Fluid	6,274	6,443	118	156
Processing	3,019	2,274	641	177
Cheese	2,211	2,500	100	29

Scoring of Farm Premises

Dairy Branch fieldmen again scored many producer farms to encourage improvement in the conditions under which milk is produced. Premises are classed as A1, A2, A3, B, C, D. Fieldmen are expected to score all fluid premises at least once each year. Mention should be made that a larger number of low grade processing and cheese producer farms are scored than is the case with fluid. Staff and time available allow only low grade producers to be visited.

Fluid	scored	AI AZ	- A3	В	D
Processing	3,846	7.0 47.2	3.85	5.7 1	.2 0.4
Cheese	1,578	3.2	17.4 4	1.8 28	.0 9.6
Fluid Processing	No. of Cows no Farms clean or Scored clipped 3,846 4.5		No Milk House 2.7	Rubber not clean 28.2	Cooling not adequate 5.0

Certificates of Merit to Producers

1.578

No. of farms

17.9

Producers of quality milk have shown a continued interest in receiving certificates of merit in recognition of their efforts. Plants and producer organizations have also shown an increased interest in this project and have assisted with prizes for producers of quality milk. Premises of producers are inspected before eligible list is prepared.

750

54.5

72.9

70.1

Producer Meetings

Cheese

Many milk quality meetings were held throughout the Province again in 1962. The majority of these meetings were well attended and considered worthwhile. A local veterinarian was invited to many of the meetings and discussed the prevention and control of mastitis. Producers were advised as to the need for improving the quality of the milk supply and how this could be accomplished.

The Associate Director of Dairying attended and addressed 33 producer and processor meetings having to do with milk and cream quality.

Grader's and Tester's Certificates

Written and practical examinations were held throughout the year to qualify graders and testers in milk and cream plants for certificates.

Total Certificates Issued to date:

	1959	1960	1961	1962	Total
Milk Graders	325	208	102	89	1,332
Milk Testers	107	112	63	49	1,235
Cream Graders	48	27	24	26	546
Cream Testers	58	36	40	23	638
Bulk Tank Milk Graders	122	111	116	86	582

Number of centres where practical examinations were held - 12

Number of candidates participating - 320

Number of centres where written examinations were held - 12

Number of candidates participating - 455

Transportation of milk and cream

Reports are received throughout the year as to the compliance of milk and cream transports with the regulations. Fieldmen check mainly on compliance as to sanitary conditions, decking boards and van bodies.

Number of milk and cream trucks inspected in 1962 - 119

Number of milk and cream trucks reported not in compliance - 69

Co-operation of the trucking industry has been good in bringing items not in compliance with the regulations into compliance.

Summary of Quality checks on milk and cream	1962	1961				
Number of cans of cream examined for quality	32,727	25.815				
Number of cans of milk examined for flavour	251,649	772.877				
Number of cans of milk rejected for flavour and acid	2,276	3.144				
Number of cans of milk examined for sediment	41,059	48.059				
Number of tests made for bacteria	338,790	129,640				
Number of cans examined for condition						
(cream and milk)	166,693	162,504				
Number of producers visited	11,697	11,040				

Regulations (Quality)

Further amendments to the quality regulations were prepared during the year. These amendments will be discussed with the producer and processor groups before presenting them to the Milk Industry Board. Quality regulations must be reviewed each year in order to meet the demands of the industry.

Extension Branch

Foreward

Five services are incorporated in the Extension Branch of the Ontario Department of Agriculture. The Agricultural Representative and the Home Economics Services have personnel working in every county and district in the province. The Agricultural Engineering Extension Service provides specialized assistance in drainage, farm building and machinery. The Fruit and Vegetable Extension Specialists and three Tobacco Extension Specialists are located in areas where production of these crops is concentrated. Through these services the Extension Branch has continued to provide leadership in the various programs designed to assist rural people identify their problems and opportunities and work toward arriving at a solution.

Additional training was provided for Extension personnel and four courses were held on farm management, farm financing, fertiliser recommendations and office management. With the increased demands being made on the Extension service in regard to farm management and farm financing, steps are being taken to develop a co-ordinated approach to the problems facing Ontario farm families. With the increased investment required to become established on a farm, more father and son agreement and incorporation information will be available to farm people. A two-day in-service training course was held for Assistant and Associate Agricultural Representatives on "How to Teach." This course was especially designed for use in teaching 4-H Club members and club leaders.

AGRICULTURAL REPRESENTATIVES SERVICE

Weather and Crops

The majority of farmers in all the counties and districts of Ontario had a very good year with crop production. The spring of 1962 opened quite dry with abnormally high temperatures, as a result spring seeding was completed relatively early with ideal growing conditions. Dry weather prevailed during the late spring and early summer and the first cutting of hay was somewhat reduced but in most areas the hay crop was saved under good harvesting conditions. The dry weather in June and the first part of July resulted in below average pasture in July. The rainfall in mid July and August was beneficial and a good crop of grain, corn and vegetables was harvested. The winter wheat crop, while experiencing from 25% to 35% winter killing in southern Ontario, produced one of the highest quality crops on record. One of the largest crops of commercial grain corn was harvested in excellent condition.

Farm Management

The Extension personnel have been working with a large number of farmers on soil and crop improvement, livestock improvement and farm accounts. With the large amount of capital required for farm operation there has been an increased demand by farmers for information on farm budgeting and farm account analysis. There is also more interest in re-organizing farm financing such as father-son agreement and incorporation. A total of 1,103 farm account books were submitted for analysis and 8,080 account books were distributed, where some accounting was kept but the books were not analysed. The farm account books were forwarded

to the Economics Branch, Ontario Agricultural College, for analysis and the figures were then interpreted by the Agricultural Representative to the respective farmer. The information derived from the average figures for the county or district regarding the various enterprises is an excellent guide in making recommendations to farmers. Some 2,526 farmers were visited and recommendations made on farm management and budgeting. A total of 6,437 farmers visited the Agricultural Representative requesting specific information on their farm operation.

Livestock Improvement

Livestock Improvement is a major program in the Extension Branch. The Agricultural Representative works with breed organizations to promote better livestock and 78 auction sales were held in the county and district. Barn meetings are held in most counties in co-operation with the breed organizations. These meetings provide the Agricultural Representative with an opportunity to discuss breeding, feeding, buildings, equipment and health problems. In some cases the Representative acts as Secretary of the County and District Clubs and directs buyers to farms with surplus registered cattle for sale. Assistance is also provided to 4-H Club members wishing to locate suitable animals for their projects.

Better feeding projects were organized in the counties and districts, keeping in mind the type and quantity of feed grain available in their respective area. Meetings were held to discuss how this grain could be used to advantage in different enterprises. Pasture improvement competitions are held in most county and districts in order to improve the cost of producing milk and beef. Beef cattle producers had a favourable year with good prices. The trend to streamline beef cattle feeding set-up whereby a large number could be handled with a minimum of labor is general in most areas. Tours were organized in twelve counties to evaluate the various housing and feeding methods. A number of large silos were erected in the province for the purpose of feeding corn sileage, using automatic feeding equipment.

The Hog Quality competition was in operation in five counties where hog grading statements are submitted to the Agricultural Representatives on all hogs marketed during the month. Newsletters containing reports on grading are circulated pointing out the factors influencing quality as well as feeding methods. A report on the winners in each county was given publicity, indicating the methods used as well as production costs. Meetings were also held with the Artificial Insemination Units as well as other programs designed to improve livestock breeding and feeding. The Agricultural Representative co-operates in implementing the various livestock health programs.

Soil and Crop Improvement

Soil and Crops specialists are now located in the various parts of the province and service all the counties and districts. These men provide a close liaison between the soils research program conducted at O.A.C. and the soil and crop improvement projects conducted by the Agricultural Representative. A total of 42 Agricultural Representatives made fertiliser recommendations based on the analyses carried out by the soils department at O.A.C. An in-service training course was held for the Agricultural Representatives in order to evaluate the method of making fertiliser recommendations. In addition the Fruit and Vegetables Extension Specialists are making fertiliser recommendations for specified crops in the areas in which they are located. These recommendations are based not only on the soil analysis but on the results obtained on the different crops. Some 24,445 soil sample reports

were received by the Agricultural Representatives. With the increasing number of soil samples analysed, the Agricultural Representatives are constantly evaluating the recommendations made with the results obtained in the respective areas. A total of 1,564 fertiliser and variety test plots were reported where yields were obtained and information was made available to farmers in the counties and district.

Assistance to Farmers in northern Ontario

The land clearing and breaking of land policy provided assistance to farmers in northern Ontario who are endeavouring to increase the number of acres under cultivation in order to improve their farm operation. Under this policy the Department of Agriculture pays 50% of the cost of clearing and breaking land up to a maximum of \$25.00 per acre. Farmers who have cleared land and are not cropping or utilising the present cleared land are not eligible for subsidy. This assistance is available only where there is sufficient acreage suitable for agricultural purposes. Applications are received at the Agricultural Representatives' Offices and each farm is visited by the Agricultural Representative to advise on a better method of utilising this land.

The following summary indicates the extent of the assistance granted in the different districts during the fiscal year:

REPORT OF CLAIMS FOR SUBSIDY Re: Northern Ontario (April 1, 1962 - March 31, 1963)

						Total
	No.	Acres Cleared	Amount	No.	Amount	Subsidy
District	Farms	and Broken	Spent '	Wells	Spent	Paid
Algoma	21	263	\$ 6,558.17	7 8	\$ 1,808.07	\$ 8,366.24
Cochrane N. &	k W. 36	646	15,462.50) 5	1,061.39	16,523.89
Cochrane S.	34	490	12,267.50) 6	1,770.62	14,038.12
Kenora	6	92	2,146.80) 3	577.25	2,724.05
Manitoulin	28	332 -	7,478.57	7	1,110.98	8,589.55
Muskoka &	44	2861/2	7,162.50	22	4,727.48	11,889.98
Parry Sound						
Nipissing	47	649	16,225.00	34	8,797.12	25,022.12
Rainy River	34	423.5	10,812.50) 4	682.54	11,495.04
Sudbury	47	521	12,612.50	25	5,158.91	17,771.41
Temiskaming	60	8453/4	20,498.59	6	1,265.00	21,763.59
Thunder Bay	77	1,2971/2	30,204.23	3 6	1,270.67	31,474.90
	434	58461/4 \$	\$141,428.86	126	\$28,230.03	\$169,658.89

Farm Safety

Farm Safety Councils are now organized in all counties and districts across Ontario and carry out an active program. The function of the local Councils is to initiate safety programs at the local level in an effort to reduce the incidence of farm accidents. The information contained in the farm accident survey has provided a basis for the establishment of projects in that it indicates the most serious problems in each county and district. The Agricultural Representative is Secretary of the local Farm Safety Council and a total of 290 meetings were held during the year. The Provincial Farm Safety Specialist and the Secretary of the Provincial Farm Safety Council visited all the local Councils during the year to assist in developing a uniform program.

The fifth Provincial Farm Safety Conference was conducted jointly by the Farm Safety Council of Ontario and Ontario Department of Agriculture. This Conference is designed to offer assistance to local Safety Clubs in the development of a uniform program.

Service Clubs

Service Clubs provide generous support for extension activities in all counties and districts. A total of 197 Service Clubs contributed \$19,156.66 to 4-H club programs in the form of prize money, trophies, banquets and trips. The Agricultural Committee of some Service Clubs also assisted the Agricultural Representative and visited some of the 4-H club members.

Rural Community Night Schools

Rural community night schools are sponsored jointly by the Ontario Department of Agriculture and the Ontario Department of Education. A total of 16 counties hold rural community night schools with 290 instructors and 3,540 in attendance. This course continues to attract a large number of rural people and is designed to keep the farmers informed of up-to-date farming methods.

Press, Radio, Television

Daily and weekly newspapers, radio and television stations continue to provide excellent publicity for agricultural activities and extension programs. A total of 3,117 press releases were prepared for the local press keeping both farm and urban people informed. Weekly broadcasts are prepared for local radio stations and a total of 3,242 radio broadcasts were made by Agricultural Representatives. The Agricultural Representative also presented 157 telecasts on local television programs.

4-H CLUB PROGRAM

In 1962 a total of 30,668 projects were undertaken by the young people enrolled in this program in Ontario. Each of these young people, who range in age from twelve to twenty years in the case of Agricultural Clubs and from twelve to twenty-six years in the case of Homemaking Clubs, carried on one or more active projects.

The Agricultural Representative Service takes the major responsibility for the organization and direction of the 4-H Agricultural Club program in Ontario. One third of the prize money for 4-H Agricultural Club members is paid by the Extension Branch. 4-H Homemaking Clubs are organized by the Home Economist under the direction of the Home Economics Service.

Following is a summary of the 4-H Clubs organized in Ontario in 1962:

4-H Agricultural Clubs	No. of Clubs	Membership
4-H Calf Clubs	378	7,135
4-H Swine Clubs	46	532
4-H Sheep Clubs	12	159
4-H Poultry Clubs	11	193
4-H Grain Clubs	80	1,305
4-H Field Crop Clubs	65	818
4-H Potato Clubs	67	1,142

4-H Tractor Clubs	50	815
4-H Forestry Clubs	35	698
4-H Miscellaneous Clubs	20	265
	764	13,062
4-H Homemaking Clubs		
4-H Food Clubs	810	8,192
4-H Clothing Clubs	856	7,875
4-H House Furnishing Clubs	91	848
4-H Hospitality Clubs	18	178
4-H Defence Clubs	22	227
4-H Garden Clubs	43	286
	1,840	17,606

Voluntary Leadership

As membership and programs in 4-H Club work in Ontario continue to expand, the role of the voluntary leader in assisting the Agricultural Representative with this work has become increasingly important. Last year there were approximately 1,500 leaders working on a voluntary basis in the various counties and districts in the 4-H Agricultural Club program.

In many counties the work of the club leaders is co-ordinated through a Club Leaders' Association. The Ontario Department of Agriculture provides an opportunity for club leaders to meet and to assist in planning programs and evaluate the results of work being carried on at the county level. Special training courses for voluntary leaders were held on a county and regional basis.

In recognition of the leadership given on a voluntary basis, the Ontario Department of Agriculture again provided a complimentary trip for leaders to either the Royal Agricultural Winter Fair or the Ontario Soil and Crop Improvement Association Convention.

Provincial 4-H Leadership Week

This Leadership Week was initiated in Ontario in 1959 and is held at the Ontario Agricultural College, Guelph. Each county and district is eligible to select one 4-H member, with basis of selection on total participation in 4-H, record of 4-H Inter-Club Competitions and participation in community activities. Forty-six boys were selected in the Province for this leadership program in 1962.

Wm. H. Danforth Leadership Training Scholarship

This scholarship was initiated in Ontario in 1958. The scholarship is awarded to one 4-H boy and one 4-H girl, and provides two weeks of intensive training at the American Youth Foundation Training Camp, Stony Lake. Oceana County, Michigan, U.S.A.

4-H Inter-Club Competions, New Liskeard

The ninth annual 4-H Inter-Club Competitions were held for north-eastern Ontario at the Demonstration Farm, New Liskeard, on October 5th for the Districts of Algoma, Sudbury, Manitoulin, Cochrane North, Cochrane South, Cochrane West, Temiskaming, Nipissing, Muskoka and Parry Sound. There were fifty-two teams taking part in the competitions.

4-H Inter-Club Competitions, Guelph

The Inter-Club Competitions for Provincial honours were held at the Ontario Agricultural College, Guelph, on October 19th, 1962 with 508 boys and girls on 254 teams taking part in Agricultural Club competitions.

Canadian Council on 4-H Clubs

This organization is set up for the primary purpose of co-ordinating and corelating the various provincial 4-H Club programs across Canada. The organization is composed of representatives from the Canada Department of Agriculture as well as from the 10 provincial Departments of Agriculture, together with 38 business members and 12 associate members who represent various national agricultural organizations.

A. G. Bennett, Director of Junior Extension, represented the Ontario Department of Agriculture as a Provincial Director on the Council for the year 1962.

The Ontario Department of Agriculture makes an annual membership grant of \$3,300.00 to the Council.

National 4-H Club Week

One of the main functions of the Canadian Council on 4-H Clubs is to sponsor National 4-H Club Week. This event provides an opportunity for outstanding 4-H Club members in Canada to meet together.

Ontario sent 14 delegates to National 4-H Club Week. Seven of the delegates were selected from 4-H Homemaking Clubs and seven from 4-H Agricultural Clubs.

Junior Programs at Class "A" Exhibitions

Central Canada Exhibition, Ottawa

There were 116 teams competing on August 21, 1962, in the General Agricultural Competitions with 246 club members participating. Camp members spent a day at the Experimental Farm and were taken on a tour of the City and the Parliament Buildings. There were some five hundred boys and girls attending this camp. A total of 248 4-H members and Junior Farmers participated in the Open Judging Competition.

Peterborough Exhibition

A total of 161 boys and girls took part in the Junior Agricultural program at Peterborough Exhibition on August 8, 1962.

The program included livestock judging competitions, a hay judging competition, an agricultural quiz and an identification test and a quiz concerning farm safety and farm equipment. In the evening the juniors were guests of the "Exhibition Board" at a dinner and were guests of the Exhibition at the evening grandstand performance.

Canadian National Exhibition, Toronto

Three hundred and seventy-eight contestants competed in each of three classes: Livestock, Field and Horticultural Crops and Farm Engineering. Contestants judged classes of livestock and field crops, answered quizzes and participated in identification contests.

Western Fair, London

There were 163 boys and girls taking part in the Junior Agricultural program at Western Fair on September 11, 1962. The program consisted of a livestock judging competition. The contestants were served dinner through the courtesy of the Western Fair Association and were also their guests at the evening grandstand preformance.

Junior Fairs

4-H Calf and Swine Club Championship Show, Ottawa

The Ottawa Winter Fair Association, through financial assistance granted by the Canada and Ontario Departments of Agriculture, staged the Eastern Ontario 4-H Calf and Swine Club Championship Show during the Ottawa Winter Fair on October 26, 1962. A total of 600 4-H Club members participated.

Queen's Guineas Class, Royal Winter Fair, Toronto

One hundred and ninety-nine 4-H Club members showed baby beef calves in this class at the Royal Winter Fair on Friday, November 16, 1962.

The Aberdeen-Angus steer shown by Ronald Storey, R.R.1, Guelph, was made Grand Champion of this class. The Queen's Guineas were presented by Everett M. Biggs, Deputy Minister of Agriculture, and the Honourable T. L. Kennedy Trophy was presented by Dr. C. D. Graham. Following is a summary of this class:

Entries:	Aberdeen-Angus Hereford Shorthorn	
	Total	199

JUNIOR FARMER EXTENSION WORK

Extension Branch personnel in the county and district offices assist in the program of local and county Junior Farmer Associations. These Associations, which have as their motto "Self Help and Community Betterment," offer a program to their members which is educational, practical, social and recreational. Excellent co-operation exists between Junior Farmer Associations and Extension Branch personnel.

Junior Farmers' Association of Ontario

The office of Secretary-Treasurer of the Association is held by the Director of Junior Extension of the Branch and for that reason the work of the Branch is closely associated with Junior Farmer work throughout Ontario.

Some 6,734 members representing 181 Junior Farmer and Junior Institute

Clubs affiliated with the Provincial Association in 1962-63.

Public Speaking Competition

Twenty-four counties entered the Provincial Public Speaking Competition this year. The \$100.00 scholarship, offered by the Association to the high ranking contestant, was awarded to Tom Shoebottom of Middlesex County. The other two finalists were: Margaret Boyko, Thunder Bay District; Anne Faulkner, Elgin County. The three finalists received gold watches from the T. Eaton Company.

Debating Competition

Eighteen Counties entered the first round of the Debating Competition. The two topics chosen by the Provincial Directors are as follows:

Rounds one and two — "Resolved That The County Council System of Government in Ontario is Satisfactory".

Rounds three, four and five — "Resolved That Labour Unions Are Beneficial to Canadian Agriculture".

Many coaches, judges and supporters helped to make this project one of the most important and successful in the Junior Farmer program. Prizes were made available for the second time by the Cities Service Oil Company Limited — a book on public speaking to each of the 68 debaters, a trophy to the winning team, miniature trophies for the members of the winning team and miniature shields for the members of the second place team.

Music

The provincial finals of the music competitions were again held at the Toronto Conference in January. Adjudicators Mr. Reginald Green and Mr. David Barrie announced the following winners: Male Quartet — Waterloo County; Mixed Quartet — Perth County; Ladies Trio — Peterborough County; Choir — Middlesex County; and Solo Instrumental — Ruth Casagrande, Bruce County.

Drama

Interest in drama was maintained at a high level with four zone drama festivals being necessary to declare entries for the Provincial Drama Festival. The zone winners were — Alloa Junior Farmers and Junior Institute, Peel County; Beaver Valley Junior Farmers, Grey County; Bond's Junior Farmers, Oxford County and Kawartha Junior Farmers, Victoria County.

Oxford County won the Ozburn Shield for presenting the best play "The Bleeding Heart of Wee Jon". The Howard trophies for the best actor and actress were won by Ed Nakashima, Oxford County and Linda Collins, Grey County.

Leadership Training Schools

Junior Farmer Leadership Training Schools were successful right across the province again this year. They were planned and conducted by the Provincial Directors and were held at Ridgetown, Simcoe, Listowel, Orangeville, Orono, Kingston, Perth and Alexandria. These schools do much to help fulfill the Junior Farmer motto "Self Help and Community Betterment."

Conferences

There was a good deal of enthusiasm over the success of the Guelph, Toronto and Kemptville Conferences. These were attended by over 1,700 Junior Farmers.

The Provincial President, Bill Galbraith of Middlesex County, assisted with the Annual 4-H Conference at New Liskeard in October and very capably represented the Association at many other special functions during the year.

Junior Farmer Publications

Three Junior Farmer publications "Your Invitation to Join a Junior Farmer Club", "Your Club Meeting" and "You the Officer" were mailed to each local club president and secretary during the year.

Two Ontario Department of Agriculture publications "Public Speaking and Debating and Effective Meetings" and "Hints to Judges" were used to good advantage by debating and public speaking contestants. They are available free of charge at Agricultural Representative offices.

Sports

Four regional sports days were quite successful events with plenty of competitors and good crowds.

The Provincial Curling Bonspiel was held at Guelph. Twenty-nine rinks were involved — 26 men's and 3 ladies'. York won the men's bonspiel and Peterborough the ladies' bonspiel.

Provincial Leadership Training Camp

With 77 campers present a very successful camp was held last fall at Geneva Park, Lake Couchiching.

Competent officers and good programs combined with enthusiastic members make for successful local and county Junior Farmer and Junior Institute Clubs. The main objective of Provincial Camp is to help provide these three requirements. The Ontario Department of Agriculture provided financial assistance and staff for this annual leadership camp.

Soils and Land Use Tour

The 1962 Junior Farmer Soils and Land Use Tour included stops in Waterloo, Brant, Norfolk, and Oxford Counties. Professor Tom Lane of the Soils Department and the Director of Junior Extension co-operated to plan the itinerary and conduct the tour. Coloured slides depicting this tour have been used extensively at Junior Farmer and other farm meetings. The calibre of delegates participating in this tour is high.

Junior Farmer Scholarships

Realizing that many of the young men enrolled in the three two year diploma courses in agriculture in Ontario are active Junior Farmer members and knowing that many of these young men will return to their home communities as leaders after graduation, the Junior Farmers' Association of Ontario has for the past three years presented a \$50.00 scholarship to W.O.A.S., K.A.S. and O.A.C. These cash awards are presented to a student who has completed his first year and has shown outstanding leadership ability.

Junior Farmer and 4-H Quarterly

The Junior Farmer and 4-H Quarterly is published by the Extension Branch for Ontario Junior Farmers and 4-H members. Over 20,000 copies are mailed to farm families, press, radio and TV outlets, extension personnel and other interested individuals. The Quarterly features educational articles as well as stories and pictures of Junior activities. This publication helps to co-ordinate and promote the Department's Junior program.

HOME ECONOMICS SERVICE

Extension Program

The Home Economics Extension Service is planned to help rural women and girls to understand the principles of homemaking practices and to put them to use for the betterment of home and family life.

With the rural homemaker in mind, extension services featured a program of courses and leaders' training schools in Foods and Nutrition, Clothing and Textiles, Home Furnishings, Home Management, Home Crafts, Health Education, Cultural Interests, and Women's Institute Procedures. Workshops, meetings, radio, television, and the press were also used to reach farm families. Junior Extension with 4-H Homemaking Clubs was continued and expanded.

Following are the subjects dealt with in courses and leaders' training schools:

Foods and Nutrition — Meat — cuts and how to cook them; Creative Cookery — making cooking an art as well as a skill; Catering for Crowds; Food Shopping; When Food Makes a Difference — a course on nutrition relating to family circumstances, age of members, etc.

Clothing and Textiles — Sew to Save Dollars and Make Sense; Focus on Finishes; More About Finishes; Belts and Buttonholes — clothing construction techniques and finishes that give clothes made at home a "custom-made" look; Choosing and Using Fabrics — wise selection of fabrics and clothing; Millinery — choosing and making hats.

Home Furnishings: What's New in Home Furnishings; Window Treatment — making curtains and draperies; New Lamps for Old — a study of lighting and the designing and making of lamp shades and bases.

Home Management: A consumer workshop on saving time and energy in housework, the safe and efficient use of electricity in the home, the management of money.

Homecrafts: Rug-making, block printing, copper tooling, needlework, leather-craft, making gloves and moccasins.

Health Education: Home Care of the Sick; Hints for the Home Nurse; Safety Begins at Home.

Cultural Interests: Books and Reading.

Women's Institute Procedures: Branch and District Workshops and Aids to Effective Speaking.

Attendance

During the year, 70 Leaders' Training Schools were held with 720 leaders attending and 5,525 women participating in the projects. Over 400 Short Courses were given with a total attendance of 6,194.

Junior Extension

Miss Florence P. Eadie, Director of Junior Home Economics Extension Service, retired in December, 1962; Miss Jean M. Scott, Supervisor of County and District Home Economists, was appointed Supervisor of Junior Extension.

4-H Homemaking Clubs

The 4-H Homemaking program for girls and young women of twelve to twenty-six years of age is promoted and supervised by County and District Home Economists. It is planned to give training in homemaking and to contribute to the girl's

development as a member of her family, her community and as a good citizen. The clubs are directed by local leaders who take instruction for the work at a training school conducted by the County or District Home Economist. Following the training school, the leaders work with the girls at club meetings held in the leader's home or the homes of members.

The program offers nineteen specific clubs in Food and Nutrition, Clothing, House Furnishing, Hospitality, Gardening, Citizenship and Health.

Membership

This year the County and District Home Economists held 178 Leaders' Training Schools. There were 1,818 clubs with a membership of 16,194.

Reports indicate that the interest of senior club members, girls of eighteen and over, was maintained in spite of heavier school work or leaving home for further study or employment. Many of these girls shared in the club leadership. Several young mothers within club membership age continue in club work because of its practical help with their family responsibilities.

Pins, Certificates and Spoons

County Honour pins and certificates were presented to 1,139 members who completed six 4-H Homemaking Club units. Provincial Honour certificates and pins were awarded to 398 members who completed twelve units. National 4-H Council certificates were presented to 125 local leaders completing five years as club leaders. Sterling silver spoons are presented in 4-H Homemaking Club work instead of prize money.

Local Leaders Recognized

When 363 experienced 4-H Homemaking Club Leaders visited the Royal Winter Fair as guests of the Ontario Department of Agriculture, a special luncheon and program was arranged for them as a group.

Juniors at Fairs

Some 605 girls took part in the 4-H Homemaking Club program at Central Canada Exhibition, Canadian National Exhibition, Western Fair, Peterborough, and the Lakehead Exhibitions. At Central Canada, members live in club camps and follow a two-day program. At the Canadian National Exhibition they have a three-day program and are given accommodation for two nights at a University Women's Residence. At Lakehead Exhibition, they also have a three-day program with over night accommodation. At all of these events, supervision is provided for the girls by County or District Home Economists.

One-day programs were featured at Belleville, Owen Sound, and Teeswater Fairs, with 269 club members participating.

At other Class B Fairs, Home Economists co-operated with Fair Boards in developing educational exhibits by 4-H Homemaking Clubs and Junior Institutes. There were 462 of these exhibits this year.

Provincial Girls' Conference

The eighth annual Ontario Girls' Conference for 4-H Homemaking Club members was held at the Ontario Agricultural College in June. Every county and district in the province was represented by club members selected by the resident

Home Economist, on the basis of achievement and service to their clubs. The girls' travelling expenses and part of their living expenses were paid by the Department of Agriculture. The four-day program, arranged by the Junior Section of the Home Economics Service, included speakers and discussions on problems of interest to girls — their education, vocation, social life and personal development.

Junior Institutes

County and District Home Economists assist Junior Institutes and girls associated with the Junior Farmers' Association in developing their programs. The Junior Institutes' programs deal with the home and family life, citizenship and the community. With the Junior Farmers, the girls take part in field days, church services, choral classes, debates, plays, public speaking, farm and home safety projects and a provincial leadership training camp. Home Economics Service conducts a Junior Loan Library Service, providing study kits and source material for the preparation of programs.

Co-operation with other Branches and Government Departments

Assistance was given in finding rural girls to demonstrate Ontario farm products at the British Trade Fair and the head of our Food and Nutrition Section supervised their work in Britain. The branch is represented on the Inter-departmental Nutrition Committee and the Toronto Nutrition Committee. Speakers were provided for the annual meetings of the Ontario Vegetable Growers and the Agricultural Societies. Members of the staff judge home economics exhibits at the College Royal at Guelph; one of the clothing teachers gave a Millinery Course to students at Macdonald Institute.

Publications

As a part of the extension work with local leaders, staff members prepared manuals for the use of both leaders and members in the women's groups and 4-H Homemaking Clubs. Bulletins already printed were revised as needed.

The periodical, Home and Country, published by the Department in the interests of the Federated Women's Institutes of Ontario is prepared and edited in the Home Economics Service. The purpose of the paper is to encourage the best in Institute programs and projects and to keep the members informed off extension services. It has been found Home and Country is a good medium for publicizing other relevant governmental information. This has been done in connection with the Ontario Hospital Services plan, the Department of Education's school curriculum introduced in 1962, the Department of Health's crusade for dentists for rural communities and the Consumer Trade Crusade.

Special Study of Farm Homes and Homemakers

Continuing work with our Special Study of Farm Homes and Homemakers, this year the eighth progress report was issued dealing with mass communication media — press, radio, and television in relation to farming and homemaking information.

Loan Library

The Loan Library is a mailing service providing source material to help women in the preparation of their Institute programs. It also supplies information on homemaking problems. During the year the Library filled 2,395 requests for literature on program topics and 164 requests for study kits on special subjects. The librarian also arranged for an exchange of correspondence between a number of Ontario women and rural women in other countries.

Radio and Television

Members of the Foods and Nutrition and Clothing staffs gave radio talks and TV demonstrations for CBC and Wingham Radio stations. Our specialist on Home Management and Consumer Education made a series of radio tapes on Consumer Information. Each month, ten talks were taped at the Ontario Agricultural College and the College distributed these to radio stations over the province. The scripts for the tapes were mimeographed in our office for the use of staff members and the Consumer's Association of Canada.

Federated Women's Institutes of Ontario

The Director of Home Economics Service acts as liaison between the Federated Women's Institutes of Ontario (F.W.I.O.) and the Ontario Department of Agriculture. As Honorary President of F.W.I.O., she is a member of the Provincial Board and serves on various committees, including the committees on Finance, Investments, Scholarships, Exhibits, the Officers' Conference and the Hand Book.

The Director, or her representative, presented the Home Economics Extension Service program at each of the 14 Women's Institute Area Conventions and at each of the 114 District Annual Meetings throughout the province.

The Director is a Counsellor for the Federated Women's Institutes of Canada, and took an active part in the international conference of the Associated County Women of the World in Australia, leading a discussion group in the Freedom From Hunger program.

The Department of Agriculture provides an office and equipment for F.W.I.O. and their office secretary is a member of the Home Economics Service staff. Upon receipt of reports to Home Economics Service from Women's Institute Districts and Areas, the Department makes a grant to assist with District and Convention work. This year, the total of the grants was \$6,488.

At the close of the year there were 1,456 Women's Institutes in Ontario, with a membership of 37,783.

AGRICULTURAL ENGINEERING EXTENSION SERVICE

The demand by the public for assistance in this area continues to expand. This year the requests for assistance in planning farm lay-outs and buildings was greater than for drainage and farm pond surveys and requests for information on the installation of irrigation systems. Requests for information on the purchase, care and management of farm machinery have increased.

To assist farmers and building contractors with farm building problems, pilot courses were organized in farm building structures, and these were well attended. Further courses are planned for next year. Courses were also held for ditching machine operators. Other courses were offered to farmers on the purchase, care and operation of farm machinery. In addition, specialized service was given on fruit and vegetable storage.

The Department of Engineering Science, O.A.C., co-operated with the staff in planning and instructing the regular two week course for Tile Ditching Machine Operators. This year's course was held in Ridgetown.

A one-week's advanced course was given to twelve operators in London on a trial basis.

These courses for operators have contributed to the decrease in requests for surveys, since more operators are now qualified to make their own surveys.

The total number of farmers assisted has increased by 32% over last year, notably in new designs, ventilation and materials handling. Advisory calls were included in the 1961-1962 figures for remodelling and ventilation.

Power and Machinery

In order to fufil the apparent interest developing in the economics of farm machinery, pilot courses in farm machinery economics have been developed and initiated as a function of the overall farm management program. Considerable interest was apparent at the five two-day courses.

Interest is gaining in the use of commercial grain driers for grain crop harvest, primarily corn. Some research has been accomplished at the Engineering Science Department, O.A.C. and a publication should be available in 1963.

Hog Production

Various methods to increase the volume of hog production and decrease the labour involved are becoming accepted to an increasing degree. Slatted floors or slatted areas over a mechanical manure removal system, are gaining acceptance. This method has the advantage of reducing, or eliminating, bedding which has become a problem in some of the straw-short areas.

Liquid manure handling is developing, utilizing either a liquid manure tank adjacent to, or underneath the building itself, or disposal into a lagoon. Manure removal by pump or auger into a tank wagon for distribution to the field is practical.

Limited feeding for fattening hogs is gaining considerable attention. This can be mechanized to reduce labour, at a cost of \$3.50 to \$4.00 per hog for initial installation.

New style farrowing buildings incorporating farrowing crates, heated floor, and open front barns for boars and dry sows, may be constructed at a cost of approximately \$175.00 per sow.

Combination farrow-to-finish buildings are also receiving considerable investigation.

All, or any, of the above features may be included in one layout, according to the choice of the owner and the local conditions, since these methods are independent of each other.

Information sheets have been released on "Ventilation requirements in Swine Buildings" and "Heat problems in controlled winter environment for swine."

Windowless buildings as a factor toward better control of ventilation and heat loss are now being favourably accepted.

Dairy Production

Difficulty in ventilating single storey dairy barns in northern Ontario has resulted in a combined operation between the Engineering Science Department and our staff in a practical experiment in the area. Further work will be carried on in the laboratory this summer. Results in a pilot barn at Thornloe produced encouraging results.

The "free stall" system of dairy housing, where cows may choose a stall at will for feeding and resting but are left untied, is gaining attention in central Ontario. Six systems of this type are already in use. Free stall housing is combined with a milking parlour system for maximum benefit.

Poultry Production

A renewed interest in "caged laying" has necessitated the design of a heavier roof truss to carry the additional weight.

Recommendation of 4" to 6" of insulation are now being included in new buildings as a result of information through various media by our staff. This also applies to hog buildings.

Windowless construction is now being more readily accepted as a means of controlling ventilation and heat loss.

An information sheet on "Environmental Control in Laying Pens" has been produced to satisfy this need.

Fruit and Vegetable Production

There is increasing interest in controlled atmosphere (C.A.) storage. Some U.S. stores are considering a Spring cut-off date for normally stored apples and only C.A. apples will be accepted thereafter.

Pallets, pallet bins and allied equipment are being more readily adopted by fruit and vegetable growers, due to the labour saving and ease of handling.

Mobile orchard towers for pruning, spraying and picking are being developed with the assistance of the local engineer.

Soil and Water

Perforated clay drainage tile made an appearance in Essex county on a limited scale. It is unlikely that this will develop into a trend, since there are no particular advantages over standard tile.

Improved methods of dealing with gas and oil pipelines and tile drains were developed by extension engineers and representatives of the pipeline company.

A "two-level" system of tile outlets has been inaugurated in the Holland Marsh. This system should be useful in sub-irrigation for the vegetable crops.

General Farmstead Construction

Planning and location of new buildings in relation to snow dropout and drafts is receiving considerable attention. Research by the Engineering Science Department in this field has proven invaluable to our field staff.

An information sheet on "Design specifications for truss gusset nails" has been produced and widely distributed. This nail enables a reduction in the number of nails used per truss with a considerable saving in labour.

Special plans have been designed for wind-bracing trussed roof buildings. The trend to the use of square, instead of round, pressure treated poles and lightweight material for ceilings and walls has necessitated this action.

Four schools for farm builders were held in south western Ontario to inform them of various new techniques. These schools were well received and could be an excellent means of providing an outlet for new ideas in construction. It is expected that similar sessions will be held across the province next winter.

Glass-lined steel silos have made an appearance and are gaining some popularity. While the initial cost is high the spoilage of silage is practically nil.

A greater trend to large diameter silos is quite evident with well over 600 being constructed throughout the province during 1962. This is a necessary adjunct to the increase in large beef feedlots and expanding dairy herds.

Many shorter silos are being constructed for the storage of "high moisture" corn for use in these feedlots.

Co-operation with the farm manager has developed a practical sheep sprayer on the New Liskeard demonstration Farm. It is hoped that farmers in the area will take it over and operate it on a custom basis.

The expansion of hog, beef, dairy and poultry enterprises has made the work of the extension engineers even more important. Most farmers who are expanding their business are seeking the advice and plans of the staff.

THE FRUIT AND VEGETABLE EXTENSION SERVICE

The Fruit and Vegetable Extension Service assists commercial fruit and vegetable growers in the production of their crops. The service is comprised of a staff of fourteen technically trained men who are located in the main production areas of the province. During the year the service continued to render and increase services to fruit and vegetable growers. In May, 1962 an office was opened at Bowmanville to assist fruit and vegetable growers mainly in the counties of Ontario and Durham.

The service is very much aware of increased costs of production and keen competition from markets. Through its programs, it advises growers on new methods and practices in an endeavour to lower the cost of production.

The branch works closely with research and the Food and Drug Directors in an endeavour to have minimum amounts of chemical residues on fruit and vegetables going to either fresh or the processing markets.

During the summer of 1962 the tabulation of the Tree Fruit Census was completed and the figures published. This census is undertaken every five years and indicates the numbers of fruit trees and grape vines of various varieties and age groups. From the census it is possible to estimate the trends in new plantings of tree fruits and grapes and also the potential crops which may be expected during the coming years.

General Crop Conditions

The 1962 growing season was most unusual and got off to an early start. Conditions were quite dry as the fall of 1961 and the winter of 1961-62 experienced below normal precipitation. The 1962 growing season began as a very dry spring and it was well along in the growing season before any effect of precipitation was experienced. Temperatures in some parts of Ontario during the latter part of April and early May reached 85-90°. The high temperatures pushed fruit trees into bloom and most tended to blossom together. There was not the usual interval between apples, cherries, peaches and pears. Ground frost around May 9 and 10 resulted in considerable injury to asparagus and strawberries. Norfolk county and the Niagara Peninsula not only had considerable frost injury but also there was "Cat Facing" which tended to reduce the yield of strawberries by about 20%. Grapes pushed out early and a number of vineyards were frosted badly by May 9-10. Young trees and vines as well as strawberry plants were difficult to get started because of the dry weather. As the season wore on rainfall tended to be spotty

across the province. Some severe thunderstorms with hail caused rather serious damage to vegetable crops and fruit crops in the Burlington area. Generally fruit growers were able to harvest their crops without too much difficulty from weather.

Early vegetable crops started in greenhouses and in frames had few problems with heating costs being much below normal. Spring crops of greenhouse tomatoes were excellent. Except for transplanting during the hot week of May, plant stands in the fields were good, especially where irrigation was used. Vegetable yields were quite satisfactory although tomatoes suffered considerably from blotchy ripening and in some cases severe hail damage. The yield of tomatoes for processing in Western Ontario was the highest in history being in the neighbourhood of some twenty tons to the acre while yields in Eastern Ontario were around ten tons or below per acre.

Muck soil vegetable crops were affected by the drier weather which prevailed in the early part of the growing season. Carrots, onions and lettuce started from seed sown in the field were severly thinned by reduced germination and by "burning-off" after they had emerged from the soil. Growth of crops was excellent however when they became established. Many growers had to resow a second or third time. Generally most muck vegetable crops yielded well. The large crop of carrots and onions has moved well with large shipments of onions going to offshore markets. The situation with regard to potatoes grown on muck soils is quite different. For two seasons there have been very few large buyers of marsh potatoes and many growers will dump much of the stored crop for the second year in a row. It is expected that the potato acerage for 1963 will be down considerably.

Insects and Diseases

The fruit crops were harvested with only minor losses from insects and diseases. Growers generally are not only becoming more familiar with pests, but they are also improving their spraying practices. The large apple crops of some five million bushels had very little injury from scab and there was an extremely good pack out.

Major pests on fruit and vegetable crops were plant bug injury to strawberries and carrot rust fly injury to carrots on muck soils. The warm dry weather in May allowed plant bugs to multiply very quickly and these turned to strawberries and caused severe injury to the blossoms resulting in what is commonly called "nubbins." Carrot rust fly has become resistant to formerly recommended insecticides and where these were used severe losses were caused to early and late crops of parsnips, carrots, and celery. Where growers used the newly recommended materials such as Diazinongranular, very little rust fly injury was noticed. This subject of certain insects becoming resistant to recommended pesticides is of increasing concern to research and Extension Specialists. Pesticide manufacturers are carrying on a great deal of research in an endeavour to control species of insects which are showing signs of resistance.

Demonstration Projects

Research information is carried out in part by the use of demonstration plots on growers farms. During the year Fruit and Vegetable Extension Specialists had sixteen demonstrations on growers farms. As the season progresses, Extension Specialists organize meetings at the farm levels where demonstrations are located in order that growers may assess some new practice. Some examples of demonstrations are: Chemical Weed Control in Potatoes and Grapes, Pruning of Fruit Trees,

Apple Maturity Tests, Variety Strain Improvement in Rhubarb, and Pruning Apple Trees on EMVII rootstocks.

Spray Service Program

To keep the grower informed on matters of pest identification and proper use of spray materials timely letters are forwarded to growers from Fruit and Vegetable Extension Specialists offices. During 1962 some 162,000 spray service letters were forwarded from various offices. The value of this program is important because of the multiplicity of spray materials and resistance by certain insects requiring new materials and more exact timing of application. While the spray service is designed primarily for information on pest control, other pertinent information on other subjects is often included.

Leaf Analysis Program

This program is a co-operative effort with the Horticultural Experiment Station at Vineland Station. The Specialists responsibility is to release application forms, collect fees and leaf samples from the growers. The Horticultural Experiment Station analyzes the samples and make recommendations to the growers and copies are forwarded to the Specialists. During the year, some 541 samples of foliage from apples, peaches, pears, sour cherries and grapes were collected, analyzed and fertilizer recommendations prepared for growers where it is necessary to interpret the recommendations. There was an increase in response to this service in 1962 and this tends to indicate a much greater awareness among growers of the importance of proper nutrition in producing high yields of high quality fruit.

Soil Analysis Program

The Soil Analysis Program is a co-operative effort with the Soils Department at the Ontario Agricultural College. Fruit and vegetable growers forward samples of soils to the Soils Department where they are analyzed. During 1962 the Specialists made recommendations on some 2,417 reports. This is more than 100% increase over 1961 and is proving a very excellent and effective program.

Fruit Tree and Vine Census

The Tree Fruit and Vine Census which was commenced in 1961 was completed during the summer of 1962. This census shows some very significant changes which have taken place in the fruit industry since the last census was completed in 1956.

The number of apple trees on standard rootstocks showed a slight decrease from 1956, however plantings of apples on the dwarfing rootstocks increased from 72,000 in 1956 to 272,000 trees in 1961. When these trees come into bearing during the next few years, it is anticipated that there will be a very sizeable increase in the apple crop in Ontario. Peach tree plantings were reduced by some 20,000 trees. However there was a very significant increase in plantings of peach trees in South Western Ontario as compared to Niagara. There were increased plantings of sweet cherries by some 9,000 trees. This increase was mainly in the Niagara area. Plantings of sour cherries increased by 24,000 trees, and here again the main increase was in the Niagara Peninsula. It is anticipated that during the next ten or fifteen years that there will be a considerable increase in the crop of sour cherries. There were only slight changes in pear plantings with an increase of some 7,000 trees. There were increased plantings of the Barlett variety and a de-

crease in the plantings of the Kieffer variety. Plantings of Japanese plums and European plums were reduced by some 60,000 trees. Growers are removing plum trees as a result of low prices for the past few years. The situation with regard to prunes is quite different to that of plums. Planting of prunes increased by roughly 20,000 trees. The changes in grape plantings were most significant, there being an increase of 1,300,000 vines since 1956. Growers are following the recommendations as to varieties as suggested by the wineries.

TOBACCO EXTENSION SERVICE

The programs of the Tobacco Extension Service are designed to assist and provide leadership to growers of flue-cured tobacco in Ontario. The headquarters for the service is located at the Experimental Farm, Delhi through the co-operation of the Canada Department of Agriculture. The Tobacco Extension Specialists use many methods to carry out the programs which are designed to reduce the cost of production, produce a high-quality product and finally to improve the economy of the grower and his family.

The Tobacco Extension Specialists investigated a wide variety of production problems during 1962. As usual, the main problems were with diseases, insects, and soil fertility. Constant observation by the Tobacco Extension Specialists is required to keep ahead of difficulties encountered by the growers.

These specialists maintain close contact and co-operate with the research personnel. There is excellent co-operation in the setting up of regional trials for the testing of varieties as well as solving of specific problems in certain areas.

The proportion of Junior Extension work is increasing. During 1962 there was a total of 6 4-H Tobacco Clubs; four in Norfolk and one each in Elgin and Brant counties. An expansion is expected during 1963. Considerable assistance is given to a Junior Farmer Club in Elgin county which consists almost entirely of young people from tobacco farms. During the year, through the co-operation of the Information Branch, The Tobacco Extension Specialists produced publication No. 7 "Production of Flue-Cured Tobacco Seedlings in Ontario."

Crop Conditions

The production of flue-cured tobacco in 1962 is estimated at 180,000,000 lbs. with an average yield of 1,540 lbs. per acre from a planted acerage of 116,790. The yield would have been considerably higher had it not been for rather heavy losses from drought, hail and frost. The crop was generally heavy bodied and this helped to compensate partially for the losses from adverse weather conditions.

Hail and frost inflicted rather heavy losses during the year. Hail on July 12, July 23, and August 8 damaged tobacco in areas in Norfolk and Oxford counties. Scattered storms in Middlesex, Brant, and Elgin counties caused some additional damage. Total losses caused by weather are estimated at 14,000,000 lbs. Little if any frost damage was reported in the Alliston, Port Hope, and Renfrew areas.

Greenhouse Diseases and Insects

Damping-off caused heavy seedling losses on many farms again this year. There appears to be two distinct times when plants are attacked. The first being early in the season when plant leaves are only about one-half inch in diameter. At this time both the plant leaves and stems are attacked. The second period is just before

entering transplanting. The latter period is by far the most serious. It would appear that present control measures are not entirely satisfactory.

Insect problems in the greenhouse were of minor importance. Ants and cut worms caused a very limited amount of damage and immediate application of recommended insecticides gave good control.

Field Diseases and Insects

There are two important considerations concerning the incidence of field diseases in the 1962 tobacco crop. First is the almost complete absence of the physiological disease, weather fleck, and secondly the tremendous increase in the amount of black root rot present in the crop. Weather fleck damage was almost non-existent in the 1962 crop. A very minor amount occurred in scattered areas on over-ripe or nitrogen deficient tobacco, but losses of this nature were very small. The absence of this disorder was of great importance to tobacco growers as weather fleck caused an estimated \$5,000,000—\$6,000,000 loss of leaf in 1961. The increase in the amount of black root rot was perhaps most astonishing since the varieties presently grown are quite tolerant to this disease. Black root rot is usually most troublesome in seasons with a cool wet spring or on fields that had been cropped with tobacco two years in a row and it was estimated that 15-20% of the farms had some black root rot. Damage usually occurred in patches although in some cases nearly complete fields were affected. In most cases the affected tobacco made rapid growth late in the season, but the yield and quality were reduced considerably.

Brown root rot, which is caused mainly by nematodes, was also quite prevalent in the crop despite a fairly warm dry spring. Tobacco Extension Specialists made some 75 field calls investigating brown root rot and over 50 soil and root samples were tested at Harrow for counts of nematodes present in the samples. It is estimated that about 1,500 acres of the 1962 were fumigated to control a nematode population.

The disease sore-shin which is a field form of damping-off caused considerable damage to newly transplanted tobacco. While each year a few plants are killed by this disease, much more than a normal amount were lost. Damage was most severe in the early plantings and many fields had to be heavily re-set.

"Grey-tobacco" continues to appear throughout the Ontario tobacco crop but it is most prevalent in the counties of Durham, Northumberland and Renfrew. Research is under way in an endeavour to determine the cause of this type of tobacco.

The main insects attacking tobacco are cut worms, root maggots, and horn worms. Minor outbreaks of other insects such as aphids and plant bugs occasionally occur. Effective control of root maggots was obtained through the proper use of recommended materials. It now appears that cut worms are becoming resistant to presently recommended insecticides. Where resistance is suspected DDT is recommended for these areas and good control is being obtained. Horn worms were well controlled with the recommended insecticides. Aircraft continue to be used extensively for the application of insecticides to control horn worms and cut worms. Several thousand acres are now sprayed by aircraft for insect control.

Applied Research Projects

During 1962 the Tobacco Extension Specialists had some seven applied research projects as well as assisting research personnel in regional variety testing and experiments dealing with grey tobacco. The applied research projects were as follows:

Herbicides for Weed Control in the Field, Foliar Fertilization, Chemical Sterilization of Tobacco Seedbeds, Damping-Off Control, Methods of Obtaining a Better Start in the Field, Plastic Mulch in the Field, and Control of Wind Damage after Transplanting. These projects were carried out using facilities provided by the Experimental Farm.

Farm Safety Program

The Tobacco Extension Specialists serve on the Norfolk Farm Safety Council and provide assistance with the general safety program within the county. Safety, particularly in the use of chemicals, is being emphasized to flue-cured tobacco growers in all parts of Ontario.

Publicity Program

Extensive use is made of press and radio to present information to tobacco growers on new methods and practices. During the year the Specialists prepared some twenty press articles for magazines and local newspapers.

Tobacco Extension Specialists co-operate with local radio stations with timely information during the growing season. During 1962 some twenty-seven weekly or special broadcasts were made for the benefit of the tobacco growers. In addition three radio tapes were prepared for special broadcasts throughout the season to radio stations in tobacco producing areas.

Farm Economics and Statistics Branch

The Farm Economics and Statistics Branch is concerned with the economic and social problems of Ontario Agriculture. The Branch aids the "decision making" of Departmental Administrators, farm organizations, farm operators and business organizations by research on production problems, marketing problems and social problems, and by the collection of agricultural statistics.

The Production Section has a continuing program of study of the costs involved and the changing methods employed in the production of all crop and livestock products. The Marketing Section investigates market structures, market supply and demand, market prices and the methods employed in the marketing of farm products. The Statistics Section publishes a yearly summary of general agricultural statistics for the Province as well as seasonal reports on dairy, crops, livestock, fruits and vegetables. The Special Surveys Section carries on the June and December surveys of livestock population and field crop acreages in Ontario, studies new methods of collecting agricultural statistics, and investigates the possibility of establishing new statistical series. The Social Problems Section conducts research into social problems associated with changing land use and changing techniques of production and marketing.

The work of the Branch was again facilitated by the fullest co-operation of Government Departments, Agricultural organizations and a large number of individual farmers. The advice and assistance of the technical staff of other branches of this Department, of the Canada Department of Agriculture, and of the Dominion Bureau of Statistics was of inestimable value and freely obtained. Particular appreciation is due the Marketing Boards and other farm organizations and especially the hundreds of farm operators who gave freely of their time and experience to provide primary data for the many studies carried on.

Research Activities

The research activities of the Branch mostly involved the collection and analysis of economic data to assist farmers, members of farm organizations, and departmental administrators in their "decision-making". Most studies require the collection and analysis of primary data as well as the use of secondary data already available.

Study reports are made available to those who can use them. In some cases distribution is limited but reports of general interest are published and widely distributed.

In addition to the studies listed below Branch personnel also collected material on many other topics including the sugar beet industry, the export-import situation, The European Common Market, and the agricultural sector in relation to the industrial sector.

Studies Completed and Reports Published

- 1. "Vertical Integration in The Fruit and Vegetable Canning Industry" by E. A. Haslett and J. H. Weijs.
- 2. "Significant Tables from D.H.I.A. 1960-1961" by Frank Barnes.
- 3. "Trends in Farm Abandonment" by H. F. Noble.
- 4. Maps "Land Use in Ontario Series" 1941-1961, 1956-1961 by H. F. Noble.

- 5. "Marketing Practices and Opinions of Ontario Beef Producers, 1960" by J. H. Weijs and A. Contini.
- 6. "Ontario Farm Management and Accounting Report 1961", by J. H. Clark and D. H. Plaunt (O.D.A. Publication 315).
- 7. "A Method of Farm Grading" by H. F. Noble.
- 8. "Some Opinions on the Use of Ontario Grapes in Home-Wine Making" by A. Contini and J. H. Weijs.
- 9. "Marketing Channels and Methods Used by Farmers in Selling Their Beef Cattle" by J. H. Weijs and A. Contini.
- 10. Cost Section of "D.H.I.A. Progress Report 1961" by Frank Barnes.

Special Studies Completed

- 1. "The Possibility of a Stabilization System as Part of a Plan for Marketing Ontario Eggs" by E. A. Haslett.
- "An Estimate of Ontario's Role in the Canadian Dairy Surplus" by W. G. Fulton.
- 3. "Notes on the Per Capita Consumption Data for the Toronto Distribution Area" by W. G. Fulton.
- 4. "The Possibility of an Auction System for Marketing Ontario Eggs" by E. A. Haslett.
- 5. "Report to the Tender Fruit Growers' Marketing Board on The Demand for Ontario Grapes for Processing" by J. H. Weijs and A. Contini.
- 6. "Summer and Winter Milk Costs" by Frank Barnes.

Annual Reports Issued

- 1. Farm Account Project Reports Jack Clark.
- 2. Dairy Herd Improvement Reports Frank Barnes.
- 3. Beef Cattle Report (4 Year Summary) R. C. Ward.
- 4. Swine Reports (Feeder, Weanling, Conventional) J. R. Stephens.
- 5. Sheep Report J. R. Stephens.
- 6. Kent County Seed Grain Production Costs F. R. Abraham and Al. Fisher.
- 7. Elgin County Cost Studies on wheat, oats, soyabeans, grain corn Al. Fisher.
- 8. Canning Tomatoes Report F. R. Abraham.
- 9. Asparagus Report J. M. MacCharles.
- 10. Grape Report (3 year average) J. M. MacCharles.

Completed Studies with Reports Under Preparation

- 1. Sugar Beet Production Costs F. R. Abraham and Al. Fisher.
- 2. "Egg Marketing in Ontario" E. A. Haslett.
- 3. "Hay Production Costs" W. J. Dillon.
- 4. "Soy Bean Production Costs" F. R. Abraham and Al. Fisher.
- 5. "Beef Cattle Production" R. C. Ward.

- 6. "Grain Corn Production Costs" F. R. Abraham and Al. Fisher.
- 7. "Apple Production Costs" J. M. MacCharles.
- 8. "Green Pea Production Costs" Al. Fisher.
- 9. "Canning Corn Production Costs" Al. Fisher.

Studies in Progress

- 1. Dairy Herd Costs and Management F. Barnes. This continuing study of the records of more than 1,200 commercial dairy herds enrolled in The D.H.I.A. program provides a vast amount of information on milk costs and farm management of dairy herds and this information is widely used in the dairy industry and in Farm Management Extension.
- 2. Farm Account Project J. H. Clark. Detailed records from an increasing number of farms of all types provide basic information for Farm Management activities in Ontario.
- 3. The Fluid Milk Formula In Ontario W. G. Fulton. A continuing examination of the movement of indices comprising the formula.
- 4. Pasture Study W. J. Dillon.
- 5. Surplus Fluid Milk Entering the Milk Processing Industry W. G. Fulton.
- 6. Inter-Provincial Competition In Beef Marketing A. Contini.
- Cost of Raising Dairy Replacements F. Barnes, M. Pembry, and E. Moore.
- 8. Analysis of Teletype Selling of Hogs J. H. Weijs.
- 9. Silo Costs According to Capacity D. N. Nicolson.
- 10. Soil Productivity Ratings based on Cost Studies J. B. Nelson.
- 11. Swine Production J. R. Stephens.
- 12. Sheep Production J. R. Stephens.
- 13. Dwarf Apples and Standard Apples J. M. MacCharles.
- 14. Asparagus Production J. M. MacCharles.
- 15. Food Terminal Study J. H. Weijs.

Statistics

The Statistics Section of the Farm Economics and Statistics Branch mails out questionnaires, usually at monthly intervals, in order to obtain data on practically all aspects of farm activity. These schedules are sent to Agricultural Representatives, officials of Municipal, Provincial and Federal Governments, processors and handlers of agricultural products, wholesale and retail food and feed dealers and to more than 5,000 farmers who act as regular farm correspondents reporting on conditions for their own farm and for their local areas.

From this source, a continuous body of agricultural statistical information is prepared to provide a knowledge of what is happening on Ontario farms for the use of a wide variety of persons who are interested in some matter or problem related to agriculture. These persons include economists and research workers, bank managers, transportation agencies, dealers in and processors of farm products, manufacturers of farm equipment, institutional and large retail purchasers of foodstuffs, editors of daily and weekly newspapers, farm broadcasters for television and radio stations, Administrators in Departments of Agriculture, the staff and students of agricultural colleges and experimental stations, members of Farm Commodity

Marketing Boards as well as for a large number of farmers who wish to use the material available in planning and assessing their own production programmes.

The statistical data compiled relating to agriculture in Ontario is published in four regular reports, which are available free of charge to anyone upon request.

These reports are:

The Monthly Crop and Live Stock Report; The Monthly Dairy Report; The Seasonal Monthly Fruit and Vegetable Report, and The Annual Agricultural Statistics Report for Ontario.

The Monthly Dairy Report, together with a March Supplement, contains statistics relating to the production of milk and milk products. Monthly schedules are obtained from all creameries, cheese factories, dairies, ice cream manufacturers and concentrated milk plants, showing the quantities of various dairy products made and handled during the month. Tables are compiled from these schedules showing county and provincial totals for the production of creamery butter and cheddar cheese and a provincial total for the output of condensed, evaporated and powdered milk products. Detailed tables are included in this report setting out on a county basis and for the cities of Toronto, Ottawa, Kingston and Ottawa purchases of milk from farmers by commercial dairies as well as sales, by size of container, of standard milk, special milk, partly skimmed milk, skim milk, buttermilk, chocolate dairy drink, cereal cream, whipping cream, and table cream. Other statistical tables show the percentage of fluid milk products sold by dairies in paper containers, the average monthly wholesale price of creamery butter and new cheddar cheese, cold storage holdings of these two commodities on the first day of each month, and the approximate prices paid by dairy farmers for feedstuffs at London and Ottawa.

The Seasonal Fruit and Vegetable Report is published monthly from April to October and contains detailed descriptive summaries for the main fruit and vegetable crops giving information on such factors as the extent of winter damage; spring seeding conditions and estimated changes in the current year's acreage from the preceding year; development and sizing of crops during the growing season; anticipated dates of harvesting and the quality of mature crops. Statistical tables are included relating to preliminary and final estimates of production, acquirements of produce by processing firms, average prices received by growers and total farm value. For fruit crops, separate estimates are prepared for both marketed production, and the abandoned portion of the crop left on trees or harvested but not sold. In the case of apples, an estimate is made for unsalvaged mature windfalls. The Annual Survey of vegetable acreages in the marsh areas of Bradfird, Leamington, Thedford and Grand Bend, and Erieau is also printed in this Report.

The Monthly Crop and Live Stock Report is published each month from May to January inclusive. It contains timely information on a county basis for general field crops and tobacco relating to the extent of winter-killing, intended acreage and planted acreage, progress of seeding, development during the growing season, preliminary and final estimates of yield, live stock numbers on farms, current prices obtained by farmers for their products, weather data and other related material.

The Annual Statistics Report brings together in one publication the latest data for all phases of agricultural activity in the province. The first part of this report contains tables showing the estimated volume and gross value of total farm production, yearly estimates of farm cash income and net income, monthly and yearly averages of prices received by producers for agricultural products and detailed

statistics relating to the production of fruit and vegetables, milk and milk products, poultry and eggs, tobacco, maple products and honey. The second and third parts, respectively, show by county for the current year the acreage, production and value of field crops and the estimated number and value of each class of livestock on farms and also a summary of crop production and livestock numbers annually for the period from 1912 to date. The last section shows temperature and precipitation data for a large number of weather stations located across the province.

The Special Surveys Section of the Farm Economics and Statistics Branch again carried on the June and December surveys of live stock populations and field crop acreages in Ontario. Changes were made that will improve the efficiency of compilation and the accuracy of the survey for the coming year. New mechanical tabulating equipment was used for the first time with the December survey.

The section was again associated with the Tender Fruit Estimating Committee in forecasting the size of the crops of sour cherries, peaches, Bartlett, and Kieffer pears in the Niagara Penninsula in advance of harvest. Sample trees, selected at random and marked when the work first started in 1961 are visited each year by a team of growers, processors and officials of the Dominion and Provincial Departments of Agriculture, and estimates of production made. These estimates are then expanded to forecast production for the area. Minor changes have been worked out in the procedure for the coming year.

As in past years, new methods for preparation of agricultural statistics were studied. Preliminary work was initiated on new statistical series that have been requested in Ontario. One of these, a survey of winter wheat growers in Ontario will be undertaken this coming year.

Census of Agriculture figures were used as a bench mark in many of the statistical series. As the results of the 1961 census became available throughout the year procedures and methods of making estimates were reviewed. This will lead to some changes in coming years. Revisions for the inter-censal years were also completed.

Communication Activities

Economic studies and the gathering of statistics have little value until the information obtained has been communicated to the individuals and organizations who can use it in the solution of agricultural problems. Wide communication of the findings of the Branch has been obtained by the distribution of published reports, radio and television presentations, public addresses and personal consultations.

Direct communication to farmers has, of course, been multiplied many times by the Farm Management activities of the Extension Branch. Veterans Land Act and Farm Credit Corporation credit advisers are also extensive users of Branch information. Branch Fieldmen have personal contacts with hundreds of Ontario farmers each year.

Published Material

The published reports of this Branch have wide distribution among farmers, farm organizations, agricultural business and agricultural economists. The yearly demand for copies of all reports runs into many thousands with requests not only from Ontario but occasionally from all other Provinces of Canada, and from many foreign countries.

Preliminary reports issued during the course of a study, even though tentative and incomplete, are also in great demand.

Public Addresses

The Director and members of the Branch staff are in continual demand as speakers at farmers' meetings and at meetings of other groups with a particular or more general interest in agriculture. Many of these meetings are interested in the findings of particular studies, while others have a more general interest in agricultural outlook, farm management, farm marketing etc.

The interest created by several of these addresses was such that it was necessary to mimeograph the material for general distribution. Some of these were as follows:

- 1. Vertical Integration Dr. H. L. Patterson.
- 2. Agricultural Changes of the Future Dr. H. L. Patterson.
- 3. Role of the Secondary Enterprise on Ontario Farms J. B. Nelson.
- Agricultural Production in Relation to World Trade Blocks Dr. H. L. Patterson.

Consultation Activities

The demands on the Branch staff for direct consultation with individual farmers and farm organizations continues to increase.

The increasing interest in Farm Management has multiplied the number of farmers seeking advice on management problems. Most of the demand is handled through the Extension Branch Farm Management Program with personnel of this Branch acting as consultants, but many individual requests were handled directly by the Branch during the year.

Expert advice and assistance from members of the staff was sought by many farm organizations and committees. This was particularly true of marketing groups, but many production groups were also looking for assistance. Among the many such organizations, members of the Branch personnel acted either as committee members or as consultants for the following:

- 1. Conservation Council of Ontario
- 2. Agricultural Committee of The Ontario Economic Council
- 3. Agricultural Rehabilitation and Development Corporation
- 4. Tobacco Inquiry Committee
- 5. Wetlands Sub-committee of Water Resources Commission
- 6. Junior Farmer Establishment Loan Corporation
- 7. Beef Pasture Improvement Committee
- 8. Milk Price Formula Committee
- 9. Vertical Integration Committee
- 10. Kent & Elgin County Soil and Crop Improvement Associations
- 11. Ontario Vegetable Growers' Marketing Board
- 12. Grape Growers' Marketing Board
- 13. Ontario Beef Producers' Association
- 14. Ontario Egg Producers' Association
- 15. South Simcoe Potato Growers' Marketing Committee
- 16. Milk Producers' Co-ordinating Board and Affiliated Organizations

Indirect Communication

Direct communication is often necessary and advantageous, but the most fruitful type is through groups and organizations. The Branch has used this type of communication extensively. The findings of Branch studies have been made available as complete reports, as synopsized reports, and as special reports prepared to fit the interest of the organization concerned. Many of these special reports have been presented as addresses at organization meetings.

This indirect communication has been mainly through such Departmental and other groups as:

- a) Extension Branch of the Ontario Department of Agriculture, particularly in their Farm Management Program.
- b) Marketing Boards.
- c) Crop and Soil Improvement Associations.
- d) Ontario Beef Producers' Association.
- e) Schools for Bankers.
- f) Dairy Herd Improvement Associations.
- g) Credit Advisers of Veterans Land Act and Farm Credit Corporation.

Farm Labor Service Branch

The Farm Labor Service in Ontario is conducted through the Ontario Federal-Provincial Farm Labour Committee. This Committee is set up under a formal Agreement negotiated annually between the Federal Minister of Labour and the Provincial Minister of Agriculture.

Members of Committee: 1962-1963

Everett M. Biggs, Deputy Minister of Agriculture for Ontario

- J. W. Temple, Ontario Regional Director, National Employment Service
- L. F. D. Coulson, Regional Employment Officer, National Employment Service
- G. H. Kidd, Agricultural Adviser, National Employment Service
- J. D. McFarlane, District Superintendent of Immigration, Canada Department of Citizenship and Immigration
- J. W. Drennan, Secretary, Farm Products Marketing Board, Ontario Department of Agriculture
- W. A. Montcalm, Director of Field Services, Extension Branch, Ontario Department of Agriculture

Chairman:

R. Gordon Bennett, Assistant Deputy Minister, Ontario Department of Agriculture

In 1962 the Ontario Federal-Provincial Farm Labor Committee again cooperated with National Employment Service in an active general farm labor program. The primary concern of the Committee is in supplying labor in cash crop areas where, and when, the number of workers available will not meet the demand.

The acreage of sugar beets in Southwestern Ontario was on a greatly reduced basis, as in 1961, and surveys indicated that local labor was available in sufficient numbers to handle the reduced acreage. Therefore, there was no need for an organized movement of sugar beet workers from outside the Province.

Applications for United States workers in the tobacco growing areas decreased and placement of Canadian workers increased.

The "Day-By-Day" Service, which placed workers with cash crop farmers in the Dixie and Bradford Marsh areas, exceeded the previous year's activity.

Following is a comparative summary of placements for 1961 and 1962:

	1962	1961
Maritime Workers Brought to Ontario	296	274
United States Curers Admitted to Ontario	1,132	1,403
United States Primers Admitted to Ontario	1,642	1,553
United States Tiers Admitted to Ontario	118	177

"Day-By-Day" Workers Supplied to Growers in Dixie and Bradford Marsh Areas: 1 April — 31 December, 62:

Number of Workers Involved	1,970	1,634
Number of Growers Supplied	156	147
Number of Days Worked	50,558	48,446

The Federal-Provincial Farm Labor Committee co-operated in the organization of the Tobacco Worker's Co-ordinating Committee established in 1962 for the purpose of housing and feeding itinerant workers prior to the commencement of the tobacco harvest. The Ontario Department of Welfare assumed most of the responsibility of the financing of this project through their policy established with the Federal Government and the municipalities, whereby the Provincial and Federal Governments share 80% of the cost on an equal basis, and the local municipality the remainder.

The program operated through July 23-31, 1962, and during that period 15,736 lunches were provided and approximately 11,000 workers took advantage of the shelter.

In addition to the financial assistance provided by the Ontario Department of Welfare, the Ontario Department of Agriculture provided for the rental of tents through the Federal-Provincial Farm Labor Agreement.

In general, the whole operation was conducted very smoothly and the Coordinating Committee is still active and will operate again in 1963.

Farm Products Inspection Service

The following programs were carried out during the 1962-63 fiscal year by the Farm Products Inspection Branch:

- 1. Administration and enforcement of the regulations under The Farm Products Grades and Sales Act, respecting (a) Fresh Market Fruit and Vegetables; (b) Fruit and Vegetables for processing; (c) Honey; (d) Flue-Cured Tobacco; (e) Compulsory Inspection Areas and Highway Stations; (f) Licensing of Produce Dealers; (g) Controlled-Atmosphere Apple Storages.
- 2. Administration and enforcement of the regulations under The Plant Diseases Act respecting (a) Apple Maggot; (b) Bacterial Ring Rot of Potatoes; (c) Black Knot; (d) Little Peach; (e) Peach Yellows; (f) X-disease of Peach; (g) San Jose Scale; (h) Bulb and Stem Nematode; (i) Licensing and Inspection of Nurseries and Dealers' Sale Stations.
- 3. Japanese Beetle trapping surveys and application of controls in co-operation with the Canada Department of Agriculture.
- 4. Variety certification of nursery fruit trees.
- 5. Variety and disease certification of raspberry canes.
- 6. Strawberry plant certification.
- 7. Market development of potatoes and turnips.
- 8. Administration and enforcement of The Seed Potatoes Act.
- 9. Other related services including acreage surveys, testing of new produce containers, fruit maturity testing, electronic determination of colour in tomatoes and forced rhubarb, checking of tenderometers and method of sampling peas for processing, checking of potato hydrometers and dry matter determination, checking of C.A. apple storage air components, fruit and vegetable exhibits, produce shipping, distribution and pricing surveys and reports, crop estimating and crop reports, Marketing Board work, extension and educational work and considerable liaison and committee work with fruit and vegetable industry organizations.

These services were administered through five district offices located in Leamington, Vineland, the Ontario Food Terminal, Toronto, Bradford and Barrie. In addition sub-offices were operated in Simcoe, Grand Bend, Galt, Hamilton, Orangeville, Alliston, New Liskeard, Sudbury, Fort William, Brighton and Ottawa. In addition an office was opened in Tillsonburg as headquarters for the Tobacco Inspection work.

Fresh Fruit & Vegetable Inspection

The application of a balanced inspectional program is designed to keep the quality of produce up to satisfactory marketable standards at all levels of trade and aids in the orderly marketing of fruit and vegetables.

Compulsory inspection areas, all controlled by Highway Inspection Stations, were designated in Essex County, the Niagara Peninsula and the Bradford Marsh. In addition the highway station at Gravenhurst checked produce being transported by truck from Southern Ontario to Northern Ontario along No. 11 Highway.

Outside the compulsory areas inspection was carried out in the main production areas, at receiving and distribution points and at wholesale and retail levels throughout the province.

Summary of Operations — Fresh Fruit & V	egetable Inspection		
	1962 - 63	19	61 - 62
Administrative Visits			
Producers	13,161	12,	,303
Wholesalers	29,918	27	,937
Packers & Shippers	38,045	38	,093
Retailers	8,489	10	,600
Markets	2,035	1	,573
Roadside Stands & Sales Barns	3,009	3	,316
Consumer Complaints	143		66
Truck & Requested Inspections			
Certificates Issued	5,048	5	,839
Blanket Inspection Reports Issued	9,338	9	,699
Trucks Through Highway Stations	30,668	32	,022
Inspection Fees Collected	\$34,413.75	\$33	,990.75
Violations			
Detentions Issued	3,881	3	,980
Violations Issued	108		99
Letters of Warning	54		85
Convictions	54		46
Total Fines	\$ 1,546.50	\$	932.50
Average Fine	\$ 28.12	\$	20.27

INSPECTION & GRADING OF PROCESSING CROPS

Tomato Grading - In 1962, 150 graders were employed to grade 77,029 loads of tomatoes, 1,467 of which were rejected by processors for being below standards. Eleven supervisors endeavoured to maintain uniformity in the grades being applied at 50 receiving platforms. A Provincial Supervisor co-ordinated the program between the three main production districts. Fees totalling \$107,841.02 were assessed equally to producers and processors, which covered the complete cost of this program and provide a surplus of 17,388.00 which is to be applied against the purchase of Agtron "E" electronic colour determination instruments.

SUMMARY OF OPERATIONS

	1962	1961	1960
Grading Commenced	August 2	August 10	August 4
Grading Finished	October 11	October 31	October 14
Days of Operation	64	77	67
Graders Employed	150	144	140
Grading Platforms	50	59	69
Loads Graded (Received)	77,029	72,056	82,426
Loads Rejected	1,467	888	1,031
Average Grades % No. 1	63	61	64
% No. 2	35	37	35
% Culls	2	2	1

Asparagus Inspection - All asparagus received by the Marketing Board for processing purposes during the 1962 season was inspected by 19 Departmental graders who checked a total of 18,328 loads of which 374 or 2.04% were found to be below required grade. Processors can now be assured that asparagus purchased by grade at negotiated prices is up to standard.

Carrot Grading - 281 loads of carrots for processing were graded at two receiving points — ten loads were rejected.

Average Grades	1962	1961
No. 1	94%	95%
Undersize	3%	2%
Culls	3%	3%

In addition considerable loads were inspected under the processing grades in productions and shipping areas. Carrot grading and inspection has aided greatly in improving and stabilizing quality of the raw product and growers have received higher prices for this improved quality.

Pea Grading - Peas are purchased by processors on the basis of tenderness as determined by tenderometer instruments. Branch personnel checked the operation of these instruments to ensure that they were calibrated and reading properly. Observations were also made on the methods of sampling used by company inspectors. Incorrect procedures were reported to the processor and to the growers' marketing board. Tenderometers found to be unserviceable or inaccurate were not allowed to be used until corrected. A handbook covering the proper operation of the tenderometer and methods of sampling was prepared by the Branch and distributed to those concerned before the 1963 season.

Fruit Crops - Inspection of fruit crops for processing was carried out on request as follows:

Crop	No. of Inspectors
Strawberries	3
Cherries	3
Kieffer Pears	16
Peaches	As required
Apples	3 (experimental)

The number of requests for this type of inspection is increasing each year and the industry is now considering the possibility of compulsory grading of all regulated fruit crops for processing purposes.

Potato Grading - 1962 was the fourth year of operation of the Salada-Shirriff-Horsey potato flake plant at Alliston. Our inspectors determined the percentage of No. 1 Grade and the specific gravity of the tubers as a basis for payment to growers under contract. Similar inspection was carried out on all potatoes being stored at Federal Farms Limited, Bradford, for the purpose of manufacture into potato chips.

Inspection of Other Processing Crops - When requested our inspectors checked other regulated fruit and vegetable crops for processing and settled grade disputes as provided for in marketing agreements.

Inspection of Honey

Honey being offered for sale at shipping point, wholesale and retail levels was constantly checked by our inspectors to ensure that the product was graded and classified in accordance with the Honey Regulations. Some packing plant extension work was also carried out.

Licensing of Fruit & Vegetable Dealers

Some 853 Fruit and Vegetable Dealer Licences and 2,049 Truck Windshield Markers were issued. Licences may be suspended or revoked for failure to pay promptly any debt owing to a producer though the purchase of fruit and vegetables. Several non-payment cases were investigated and all were settled satisfactorily without the necessity of suspending licences.

Acreage Surveys

Vegetable acreage surveys were conducted covering Bradford, Grand Bend, Thedford, Point Pelee, Erieau, Alfred and Moose Creek marshes. Muck land acreages are obtained each year and indicate the trends in vegetable production which can be related to marketing domestically and for export.

A Provincial greenhouse survey commenced in 1961 was completed and a report issued.

Total No.	No. Sq. Ft. In	No. Sq. Ft. In	No. Sq. Ft. In
Sq. Ft.	Vegetables	Flowers & Veg.	Plants & Flowers
16,162,485	7,246,032	1,114,348	7,802,105

Controlled-Atmosphere Storages

C. A. Apple Storages to the number of twenty-two were licensed comprising a total of 61 storage compartments, only one of which failed to meet the air component requirements. 93 C. A. Repackers were licensed and checked constantly by our inspectional staff.

Statement of Revenue

Distriction of Iterative				
Type of Work	1962 -	63	1961 - 62	1960 - 61
Inspection Certificates	\$ 34,413	.75 \$	33,990.75	\$ 34,881.75
Tomato Grading	107,841	.02	93,879.46	104,893.47
Carrot Grading	616	.00	1,359.00	516.00
Potato Grading	1,480	.50	2,094.00	1,380.00
Onion Grading	-		1,092.50	-
Pear Grading	1,462	.16	-	69.00
Peach Grading	580	.40	42.00	-
Asparagus Grading	2,493	.62	1,743.56	1,905.72
Cherry Grading	522	.75	748.40	303.85
Strawberry Grading	898	.15	696.70	414.15
Apple Grading	640	.20	-	-
Dealer Licences	10,546	.00	10,838.50	11,151.36
Nursery Licences	349	.90	365.35	327.40
C. A. Licences	203	.45	203.45	200.15
Court Convictions	1,546	.50	932.50	1,170.85
	\$ 163.594	.40 \$	147.986.17	\$ 157,213,70

The Plant Diseases Act and Related Work

The following work was carried out during the 1962-63 fiscal year by the Farm Products Inspection Branch.

- (a) Enforcement of regulations under The Plant Diseases Act respecting:
 - (1) Inspection of nurseries and premises of dealers in nursery stock.
 - (2) Apple maggot inspection in requested plant disease control areas.
 - (3) Enforcement of potato bacterial ring rot regulations.
- (b) Variety certification of tree fruits in nurseries on request.
- (c) Raspberry certification on request of plant growers.
- (d) Co-operating with Vineland Experiment Station in strawberry certification program for strawberry plant growers.
- (e) Co-operating with the Division of Plant Protection, Canada Department of Agriculture in trapping and the control program of Japanese Beetle.

The major part of this work is covered in a 4-month period during the growing season.

The technical and field work is guided by the Provincial Entomologist. The Director of The Farm Products Inspection Service accepts the responsibility of directing the administration and enforcement of the Plant Diseases Act. The Chief Inspector of Plant Diseases arranges the operation of various programs. A Senior Inspector carries on inspection and assists with the supervision of the staff required for such programs. The staff employed is a combination of permanent staff farm products inspectors and casual employees.

Plant Diseases Inspection of Nurseries

The Department of Plant Protection, Canada Department of Agriculture, continued the inspection of nurseries for plant diseases listed in The Plant Diseases Act as part of their survey work in Ontario during the growing season. Incidences of plant diseases were reported to the Farm Products Inspection Service who took action to remove the infected material. Trees infested with San Jose Scale were removed in three nurseries in addition to the application of a dormant spray in one instance to kill scale insects. In a fourth nursery San Jose Scale was noted in a heeled-in-block that was removed by the owner and destroyed before a count of the infested trees could be made. The only Black Knot reported were 30 wild plum in the fence row of one nursery. These were removed and destroyed. 295 nurserymen and 59 dealers in nursery stock were licensed in 1962.

Apple Maggot Inspection

The usual June and late July inspections for apple maggot in plant disease control areas was carried out to determine whether apple orchards qualified for pre-harvest inspection as a result of the application of sprays and control of unsprayed trees and hawthorns in the area surrounding the orchards concerned. Five orchards did not comply with the requirements. In addition four other orchards were not included in pre-harvest inspection due to extensive hail damage. 337 growers with 455 orchard blocks involving approximately 10,500 acres received a pre-harvest inspection. Of the 455 blocks inspected 252 showed infestation of apple maggot in one or more varieties, or 58% of the blocks, and an increase of 20% over 1961.

Bacterial Ring Rot of Potatoes

Sixteen inspectors were employed to check commercial potato fields in the main areas during the growing season.

Potatoes on 85 farms were found to be infected with Bacterial Ring Rot, during the 1962 survey. This involved approximately 1,092 acres, and compares with 673 farms and 3,640 acres in 1946. Losses varied over those years from a trace to 35% and 40%.

Variety Certification

Inspection of two year old apple, pear, plum and sour cherry, and one year old peach and sweet cherry for trueness-to-name was carried out in 14 nurseries on request. Approximately 310,000 trees were inspected and 4,904 mixtures of varieties were found.

Raspberry Certification

Field inspections of raspberry plantings for virus disease and mixture of varieties is offered on request. In 1962, 28 plantings with 18 different varieties of red raspberries and one purple raspberry variety and containing a total of 1,280,000 canes were certified. Two plantings, involving 90,000 plants were refused certification because of varietal mixtures and excessive mosaic infection. In the development of a new raspberry certification program that is expected to provide a better type of certified plant by the fall of 1965, propagation of foundation stock was developed during the past year.

Strawberry Plant Certification

Strawberry plant certification program, started in 1960, resulted in the certification of 9 varieties of certified plants in the plantings of 3 growers totalling 3,200,000 plants. Two other growers failed to comply resulting in the loss of 200,000 plants. Only one grower produced foundation stock during 1962.

Japanese Beetle Certification

Japanese Beetle population survey and control program was again carried on as a joint effort with the Plant Protection Division, Canada Department of Agriculture. Seven trap attendants provided by the Farm Products Inspection Branch worked in 6 towns and cities under the supervision of the Plant Protection Division, Canada Department of Agriculture. As a result of trapping operations soil treatment was given to approximately 400 acres in Windsor, Leamington, Niagara Falls, St. Catharines and Hamilton.

Other Plant Diseases

No cases of Little Peach, Peach Yellows, X-disease of peach were reported on nursery stock in 1962.

TOBACCO GRADING AND INSPECTION

The Farm Products Inspection Branch assumed the responsibility for the grading and inspection of Flue Cured Tobacco in Ontario from the Canada Department of Agriculture in January, 1963.

Mr. James Pearson was appointed as Administrator and a district office was set up in Tillsonburg and a clerk-stenographer employed.

An agreement was made between the Tobacco Board and the Ontario Department of Agriculture which outlined the administration of the program and the responsibilities of the Board and the Department. The administration consisted of (1) selecting and appointing six Tobacco Supervisors, one for each of the three auction warehouses on each shift. These were top personnel with the knowledge and qualifications necessary to carry out proper and impartial supervision. (2) Selecting and appointing 18 Tobacco Inspectors, 3 for each warehouse on each shift. (3) The Tobacco Board employed 60 Graders. (4) The Inspection Service then directed, supervised and co-ordinated the complete program.

A Tobacco Grading Committee was instituted under the chairmanship of the Director of the Farm Products Inspection Branch, the Tobacco Grading Administrator, 3 members appointed by the Tobacco Board, and the 6 Tobacco Grading Supervisors. This Committee was very active and operated under the following terms of reference:

- (1) To review and assess the tobacco grading, inspection and supervisory program being carried out.
- (2) To consider methods of operation, maintenance of uniformity of grading and inspection, appointment, allocation, supervision, promotion, transfer, rotation, dismissal and general conduct of Grading and Inspection personnel as well as rates of pay and hours and conditions of work.
- (3) To discuss the existing grades at the end of each marketing season and to make recommendations concerning grades as outlined in The Farm Products Grades and Sales Act.
- (4) To consider any other matters pertaining to the Grading and Inspection of tobacco.

This integrated program carefully directed and supervised tended to place a higher percentage of properly graded tobacco on the auction floors and helped greatly to regain the confidence of the industry in the grading and inspection of tobacco. It also eliminated to a large extent the conflict which had built up in the past between graders and government inspectors.

No interference whatsoever was tolerated. Disputes were handled by appeal inspections carried out by Supervisors. Complaints were fully discussed by the Grading Committee.

Market Development - Potatoes & Turnips

Even with a substantial increase in population, and higher per capita consumption of potatoes, imports into Ontario were 3,607 carloads less in 1962 than 1960. Exports increased by 167 carloads. Likewise, due largely to establishment and enlargement of potato processing facilities, output continued to increase, while imports from U.S.A. declined slightly, and keen competition from other provinces continued. Promotion continued to increase the use of Ontario grown potatoes by encouragement of facilities for storage, grading and packaging, coupled with promotion on value, quality and also to overcome the fallacy that potatoes are fattening.

The trend towards building more potato storages and improving existing ones has continued. Many more are needed to overcome the bottleneck of providing continuity of supplies.

Turnips

Due to increased demands on local domestic markets, and a below-average crop of turnips in Ontario for 1962, exports to the United States are down about 350,000 bushels as compared to the same date last year. Prices were satisfactory, with the season's clean-up selling as high as \$3.00 per bushel to wholesale.

For the first time in history, enquiries, followed by firm offers, were received from prominent food firms in the United Kingdom. In the United States, the Ontario products is known as "The Canadian Delectable Rutabaga", while in the U.K. "Swede" is the popular term.

Growers are now using sized, treated, registered seed of the Laurentian variety. Chemical weed control was used this year for the first time in turnips on a commercial scale.

Some shippers are now using cartons to advantage and their use for export is on the increase. A movement is now underway to survey all processors, and the export trade, as there are indications volume can be increased substantially.

Seed Potato Improvement

Assistance and co-operation was given in organizing, carrying through and reporting on a winter testing seed program in order to improve Foundation stock. In addition, an objective was set to double the numbers and acreage of seed potato growers in the Province, in order to supply requirements of commercial growers. Seed sales were promoted by distribution of seed lists, press and radio releases, etc. In co-operation with trade, growers and other departmental officials, many projects were undertaken and given attention.

Five Hundred Bushel Potato Clubs

Highest estimated potato yield for Ontario for 1962 season was 822 bushels of Green Mountain variety grown by Ernest Bradley, Vankleek Hill, Prescott County. The Green Mountain variety is one of the oldest grown in the Province, and for many years it has been recognized for its superior eating quality, and excellent grade. Mr. Bradley was one of 162 contestants in 8 High Yield Potato Clubs organized in 1962. Average yield reported was 514 bushels per acre — the highest on record and compares with a provincial average of 320 bushels, and 261 for Canada.

Tied for second place was Chas. Lunney, Zephyr, Ontario County, and William Dorsey, Alliston, South Simcoe. Both grew Kennebec variety, with respective estimate yields of 821 bushels per acre. Dry matter was 21.5 per cent for the Lunney sample and 20.5 for the Dorsey crop. The average percentage dry matter for the crops of 121 contestants was 20.4. This is the highest on record. In 1953, it was 16.3 per cent. This indicates more general attention to factors that influence cooking quality and largely accounts for the wider acceptance and keener demands for Ontario grown potatoes.

Dufferin County had the club with the highest number of contestants (32) with an average estimated yield of 539 bushels per acre, compared with 12 members of the Cochrane District club where superior seed is produced, with an average yield of 571 bushels per acre.

High yield potato clubs in Ontario were first organized in 1943 with 500 bushels per acre as an objective, and reached a peak in 1948 with 21 clubs and 394 contestants.

Lafontaine Seed Potato Restricted Area

The Seed Potatoes Act 1950 was passed by the Legislative Assembly of Ontario to enable growers of seed potatoes to petition the township in which they grow potatoes to establish restricted areas in order to control the kinds and grades of potatoes grown in such area and to control the spread of disease. In other words, the Act allows good seed growers to advance and expand their activities with confidence. Thus it can be not only an advantage to those who sell, but also to those who buy, for high quality seed is the first requisite to successful crop production.

In 1951, some ninety odd farmers in the Lafontaine area of Tiny Township, North Simcoe, were the first to take advantage of this Act. While this area abounds in good potato soil, it is the extra interest and extra care exercised by the seed grower that is paramount in production of disease free seed. The persistent use of hand tuber units has been an important factor in maintaining disease free seed in the Lafontaine area. In the past year, a tuber-unit mechanical planter has been obtained. It is the first of its kind in Canada and it is used for custom work.

Seed from Lafontaine has given results equal and often surpassing other sources. North Simcoe is now the leading seed potato area of Old Ontario. In recent years, there has been a distinct changeover from Katahdin to Cherokee, Kennebec and Sebago varieties, and a trend towards contract growing.

The Farm Products Marketing Board

Marketing plans are the legally constituted means for collective bargaining or for directing single sales agencies for designated farm products. Each plan must provide for a definite program of marketing activities and must be supported by a plebiscite showing that at least 66-2/3 per cent of the producers voting are in favour of the plan.

A marketing plan is comprised of two parts. Part 1 is the plan. The plan is approved by the Lieutenant Governor in Council on the recommendation of the Minister of Agriculture. The plan is the framework. It constitutes the producer marketing board as the local board to administer the plan. It provides for the method by which the local board is to be elected. It defines the farm product or products to be regulated under the plan and the portions, if any, of the farm product to be exempt from the regulations of the plan. Part 2 comprises the regulations. The regulations are made by the Farm Products Marketing Board. They are the operational parts or the mechanics of the marketing plan. They define the extent of the regulations or control over the marketing of the regulated product. They provide for the collection of licence fees or service charges payable by the producer, on the sale of the regulated product or products to pay for the administrative or marketing expenses of the local board. Finally, the regulations set out the marketing powers delegated to the local board or to an agency of the local board to carry out the purposes of the plan.

Each marketing plan is administered by the local board of producers elected by the producers. Subject to the approval of the Farm Products Marketing Board, local boards operating collective bargaining type marketing plans are empowered to negotiate and fix agreements respecting minimum prices, forms of contract and conditions of sale; local boards directing single sales agencies are given full trading powers over the regulated farm products.

The functions of the Farm Products Marketing Board are receiving and analysing of requests from groups of producers seeking marketing plans; the development of plans and regulations with producers; the holding of plebiscites and recommendations following plebiscites. The Board has wide authority of investigation relating to the cost of production and marketing and regulated farm product; prices, trade practices, management policies and other related matters. Licensing of dealers and Processors of regulated products is vested in the Board.

The present Board is constituted as follows:

Chairman - George A. McCague

Members - Gordon Hill

Gordon Greer

Alden McLean

W. C. Nickerson

Secretary - J. W. Drennan

During the early summer of 1962 opposition developed in certain sections of the onion producing areas of the Province over the operation of the Onion Marketing Plan. The growers had in September 1961 voted to have the plan established, by a 73.75% favourable vote. The opposition culminated in a petition filed with the Board asking that the plan be resubmitted to a vote of the growers.

On July 20th, 1962 a vote of the onion growers on the question of continuing the plan indicated that 65.7% of the growers voted in favour of continuing the plan. This percentage was a fraction short of the 66-2/3 favourable vote which the Board had announced would be necessary to sustain the plan. Owing to the very close percentage the Board ordered a recount of ballots, which verified the original count, following which the Board ordered the operation of the plan suspended.

There are now 13 plans in force under the Farm Products Marketing Act covering 26 crops as follows:

The Ontario Asparagus Growers' Marketing Plan, 1938

The Ontario Tender Fruit Growers' Marketing Plan 1959

The Ontario Sugar Beet Growers' Marketing Plan, 1942

The Ontario Seed-Corn Growers' Marketing Plan, 1942

The Ontario Berry Growers' Marketing Plan, 1944

The Ontario Bean Growers' Marketing Plan, 1944

The Ontario Vegetable Growers' Marketing Plan, 1946

The Ontario Hog Producers' Marketing Plan, 1946

The Ontario Grape Growers' Marketing Plan, 1947

The Ontario Soya Bean Growers' Marketing Plan, 1949

The Ontario Fresh Peach Growers' Marketing Plan, 1954

The Ontario Flue-Cured Tobacco Growers' Marketing Plan, 1957

The Ontario Wheat Producers Marketing Plan, 1958

Each plan operated in 1962 as follows:

The Asparagus Plan

Some 789 growers sell asparagus annually to the canners in Ontario for processing. Only the asparagus sold for processing is regulated, i.e. asparagus sold on the fresh vegetable market is exempt from the plan. After minimum prices and conditions of sale have been negotiated the local board acting as the marketing agency sells all the asparagus purchased for processing, each growing district being allocated its share of the tonnage sold. An unique feature of this plan is an agreement by the growers to cease cutting when total orders have been filled. In this way, production is fitted to demand.

In 1962, 1,931 tons of asparagus were sold for processing at a total value of \$699,663.00. This compares with 1,800 tons valued at \$660,259.00 for processing in 1961.

Asparagus minimum prices in 1962 compared with 1961 were:

		1961	
No. 1	Grade		19 ¢ per lb.
No. 2	Grade		$13\frac{1}{2}\phi$ per lb.
		1962	
Select	Grade		26 ¢ per lb.
No. 2	Grade		$13\frac{1}{2}$ ¢ per lb.

The Tender Fruit Plan

Some 2,700 growers sold 4,379 tons of sour cherries valued at \$875,172.00; 1,427 tons of sweet cherries valued at \$404,710.00; 1,369 tons of plums and prunes valued at \$107,143.00; 6,411 tons of Bartlett pears valued at \$701,171.00; 13,615 tons of Kieffer pears valued at \$790,203.00; and 21,302 tons of peaches valued at \$2,210,703.00; or a total of 48,503 tons of Tender Fruit valued at \$5,089,10.00 sold for processing in 1962.

This compares with 11,891 tons of sour cherries valued at \$2,292,125.00; 1,216 tons of sweet cherries valued at \$327,146.00; 2,749 tons of plums and prunes valued at \$208,849.00; 6,476 tons of Bartlett pears valued at \$751,216.00; 8,672 tons of Kieffer pears valued at \$485,632.00, and 31,538 tons of peaches valued at \$2,901,496.00, or a total of 62,542 tons valued at \$6,966,464.00 sold for

processing in 1961.

Cherry, plum, pear and peach minimum prices in 1962 compared with 1961 were:

1062

1061

	1962	1961
Sour Cherries	\$ 195.50 per ton	\$ 190.50 per ton
Sweet Cherries		
White and similar varieties	260.50 " "	260.50 " "
Black and similar varieties	280.50 " "	280.50 " "
Plums		
	85.00 " "	80.50 " "
Damson variety Jam types	67.50 " "	63.00 " "
Prunes	85.00 " "	80.50 " "
Tiunes	85.00	80.30
Pears		
Bartlett Pears 2" and up	107.50 " "	108.50 " "
Bartlett Pears 1¾" to 2"	62.50 " "	63.50 " "
Bartlett Pears Less than 13/4"	62.50 " "	
Kieffer Pears 2-1/16" and up prior		
to November 5th	57.00 " "	57.00 " "
Kieffer Pears 1¾" to 2-1/16" prior		
to November 5th	33.00 " '	33.00 " "
Kieffer Pears 2-1/16" and up after		
November 5th	62.00 " "	62.00 " "
Kieffer Pears 13/4" to 2-1/16" after	29.00 " "	29.00 " "
November 5th	38.00 " "	38.00 " "
Pears other than Bartlett or	62.50 " "	62.50 " "
Kieffer varieties	62.50 " "	63.50 " "
Peaches		
Jubilee	105.50 " "	94.00 " "
Elbertas	105.50 " "	94.00 " "
"V" type and other varieties	100.50 " "	89.00 " "

The Sugar Beet Plan

In 1962 some 946 growers delivered 229,247 tons of sugar beets produced from 12,653 acres. This compares with 278,842 tone of sugar beets produced from 16,353 acres by 1,171 growers in 1961. Average yield per acre in 1962 was 18.12 tons per acre compared to 17.05 tons in 1961. Total estimated value of sugar beets

to growers in 1962 was \$3,210,000.00 as compared to \$3,229,258.08 in 1961. Average sugar content in 1962 was 15.8 per cent as compared to 14.7 per cent in 1961. Average estimated price delivered plant to the grower was \$14.00 per ton for 1962 compared to \$11.58 per ton in 1961.

Refined sugar prices in Canada have risen sharply in the past several months and are now at the highest level in forty years. Many sugar experts believe present world sugar conditions will exist for some time and that prices substantially higher than a year ago will likely continue.

The Seed Corn Plan

The membership of this marketing group is comprised of some 88 hybrid corn growers in Southwestern Ontario who specialize in the production of corn for seed.

Through negotiation between the grower and the dealer, a base price is established for dried commercial corn to which a premium is added to arrive at a minimum price to the grower for corn for seed. The base price is the Chicago May corn future daily closing price (subject to the current rate of exchange) a bushel average for the three months, December, January and February in each year. The base price for the 1962 crop was \$1.69 per bushel, 15.5 per cent moisture, and for the 1961 crop was \$1.65 per bushel, 15.5 per cent moisture. Acres planted to hybrid corn for seed in 1962 totalled 3960 compared to 4,296 in 1961.

In 1962, 216,333 bushels approximately of hybrid corn for seed were produced compared with 251,490 bushels of hybrid corn for seed produced in 1961. Farm value of the crop totalled \$440,025 for hybrid seed in 1962, compared to \$438,610 for hybrid seed in 1961. The minimum prices for hybrid corn for seed in 1962 compared to 1961 were:

HYBRID CORN FOR SEED The base price on the base

The base price and a minimum premium of 40¢ on the base price also allowance for certain costs when assumed by the grower, namely:

		1962	1961
(a)	Dealer supplies the seed and detassles the corn. Grower delivers the corn on the cob to the dealer.	\$1.69 per bus.	\$1.65 per bus.
(b)	Grower supplies the seed, detassles and delivers the corn on the cob to the dealer +	\$1.69 per bus. .52½" " \$2.17½" "	\$1.65 per bus. .52½" " + \$2.17½" "

The Berry Plan

Some 525 growers sold 2,139,498 quarts of strawberries valued at \$420,155.00; 246,073 quarts of red raspberries valued at \$75,199.00 and 225,045 quarts of purple raspberries valued at \$68,967 or a total of 2,610,616 quarts of Berries valued at \$564,321.00 sold for processing in 1962.

This compares with 2,783,822 quarts of strawberries valued at \$555,781.00; 839,718 quarts of red raspberries valued at \$247,798.00 and 290,699 quarts of purple raspberries valued at \$78,439.00; or a total of 3,914,239 quarts valued at \$882,018.00 for processing in 1961.

Strawberries and raspberries minimum prices in 1962 compared with 1961 were:

	1962	1961
Strawberries	17¢ per qt. box	17¢ per qt. box
Raspberries		
Red	28¢ per qt. box	Open market
Purple	27¢ per qt. box	27¢ per qt. box

The Bean Plan

White bean production in 1962 from a total of 60,000 acres produced 1,400,000 bushels for an average yield per acre of 24 bushels, a marked increase from 1961 crop of 1,200,000 bushels from 65,000 acres for an average yield of 19 bushels per acre.

The 1962 minimum price to the growers arrived at by negotiation was as follows:

for all beans delivered on or before the 31st of December 1962, the minimum price shall be \$6.35 per 100 pounds, and

for all beans delivered from and including the 1st day of January 1963, to and including the 14th day of August, 1963, the minimum price shall be \$6.50 per 100 pounds.

The above prices are an increase of 10¢ per 100 pounds over the 1961 crop.

The market for white beans has remained active since harvest and the 1962 crop should be well cleaned up by the time the 1963 crop is harvested. Sanilac is the most popular variety. Seaways grown for the first time last year in volume proved quite satisfactory, especially for late sowing.

The levy deducted from the growers to support the minimum price in each year is 77 cents per hundredweight in addition to the regular eight cents per hundredweight licence fee for administration purposes.

The Vegetable Plan

Some 5019 growers sold 347,922 tons of tomatoes valued at \$12,901,413.00; 24,211 tons of green peas valued at \$2,431,175.00; 108,655 tons of sweet corn valued at \$2,871,164.00; 4,253 tons of green wax beans valued at \$487,608.00; 7,164 tons of beets valued at \$252,080.00; 3,591 tons of cabbage valued at \$62,685.00; 13,673 tons of carrots valued at \$424,833.00; 8,454 tons of pumpkin and squash valued at \$89,556.00; 1,161 tons of lima beans valued at \$129,975.00 or a total of 519,084 tons of vegetables valued at \$19,650,489.00 sold for processing in 1962. No long green cucumbers were sold for processing in 1962.

This compares with 290,606 tons of tomatoes valued at \$10,519,937.00; 26,490 tons of green peas valued at \$2,652,959.00; 99,262 tons of sweet corn valued at \$2,604,955.00; 3,328 tons of green or wax beans valued at \$367,248.00; 5,307 tons of beets valued at \$182,037.00; 6,497 tons of cabbage valued at \$94,386.00; 10,490 tons of carrots valued at \$346,106.00; 11,315 tons of pumpkins and squash valued at \$113,710.00; and 1,132 tons of lima beans valued at \$118,618.00, for processing in 1961 or a total of 454,427 tons of vegetables valued at \$16,999,956.00. No long green cucumbers were sold for processing in 1961. Minimum prices for 1962 compared with 1961 were as follows:

 No. 1
 \$ 41.50 per ton
 \$ 41.50 per ton

 No. 2
 25.50 " " 25.50 " "

Green Peas — graded average of tenderometer readings		
0 - 80	175.00 " "	175.00 " "
81 - 85	150.00 " "	175.00 " " 150.00 " "
126 - and up	84.00 " "	84.00 " "
Sweet Corn	26.00 " "	26.00 " "
Green or Wax Beans	105.00 " "	105.00 " "
Beets		
(a) for beets graded by the processor		
3/4" to 1-1/4" diameter	71.00 " "	71.00 " "
1-1/4" to 1-3/4" "	42.00 " "	42.00 " "
1-3/4" to 2-1/2" "	30.00 " "	30.00 " "
2-1/2" to 4-1/2" "	15.00 " "	15.00 " "
(b) for ungraded beets		
1-1/2" diameter and up	24.00 " "	24.00 " "
Cabbage	14.00 " "	14.00 " "
Carrots		
(a) ungraded minimum diameter		
1-1/4" June 25th to August 15th	49.00 " "	49.00 " "
(b) ungraded minimum diameter	.5,00	47.00
1-1/2" August 16th to August 31st	35.00 " "	35.00 " "
(c) ungraded minimum diameter	33.00	33.00
1-1/2" September 1st to Septembe	r	
15th	28.00 " "	28.00 " "
(d) ungraded minimum diameter	20100	20.00
1-1/2" September 16th to Novem	tion .	
ber 10th	24.00 " "	24.00 '' ''
(e) ungraded minimum diameter		
1-1/2" November 11th to March	1	
31st	27.00 " "	27." " "
Lima Beans	\$107.00	\$107.00
Pumpkin and Squash	10.00	10.00
	10.00	10.00
Long Green Cucumbers		
No. 1	(None processed)	(None processed)
No. 2	77	77

The Hog Plan

This is a marketing plan which operates with agency powers. The sales of hogs processed through federally-inspected and approved packing plants in 1962 were 2,258,619. This compares with 2,187,741 processed in 1961.

With approximately two years of experience the teletype method of sale, initiated May 8, 1961, has become established as one of the most effective selling procedures ever devised. Its progress has been closely watched by national and inter-

national producer groups, and has been adopted by one or more organizations in the United States. Producer response to the system of orderly marketing was in evidence during the past year. Delegations from the western provinces evidenced a good deal of interest indicating prospects of what could lead to national development of a hog marketing program.

In 1962, a Swine Improvement Council was organized to bring together the aggregate of information and experience of those persons connected with the hog industry in this Province. The objective of the Council is threefold, to co-operate with government in the development of programs designed to encourage improvement in quality of hogs produced; to enlist the support of all persons interested in the swine industry and to promote practices which are in the best interests of the swine industry. It is expected the Council may become an authoritative and objective source of information on swine breeding, feeding, health, housing and marketing.

The Hog Industry Advisory Committee established in 1961 is meeting regularly. The members of this committee represent producers and processors under the chairmanship of a member of the Farm Products Marketing Board. The activities of the committee are aimed at promoting better understanding between producers and other links in the producer-marketing chain. The committee discusses matters relating to the marketing of hogs in the interests of an efficient program.

The employment of producer funds in the development of county activity, including quality improvement, is reflected in many projects which will benefit producers and the industry.

An agreement was reached during the year between the Ontario Hog Producers' Marketing Board and the First Co-operative Packers. This concerns the hog marketing operations of these respective organizations and is working to the mutual satisfaction of each.

The Grape Plan

Some 1,199 growers marketed 35,521 tons of grapes valued at \$3,709,711.00 for processing in 1962. This compares with 31,995 tons of grapes valued at \$3,-214,927.00 sold for processing in 1961.

Grape minimum prices in 1962 compared with 1961 were:

1962 1961 Grapes \$100.00 per ton \$96.00 per ton

The Soya Bean Plan

The 1962 planting of 221,000 acres produced 6,600,000 bushels, for an average yield per acre of 30 bushels. This compared to 8,650,000 bushels for an average yield of 33.6 bushels per acre in 1961.

This plan is similar to the other negotiation type cash crop plans, except that the market for soya beans is limited to a few processors, and that Canada is still less than 50 per cent self-sufficient in its production of soya beans for its combined soya oil and meal requirements. Soya beans, soya meal and soya bean oil for industrial purposes and canning sardines are imported free of duty; soya bean oil for edible purposes is imported at a 20 per cent tariff rate. The cost of soya beans to Ontario processors must at all times be competitive with the delivered cost of foreign soya beans, soya bean oil and a host of other competing edible oils. The plan is sup-

ported by means of a licence fee of 1/2 cent per bushel paid by the producer to the Board at the time the soya beans are sold. A dealer's maximum charge of 10 cents per bushel to the grower for cleaning, handling and selling soya beans, which due to competition between the dealers is seldom charged in full, and a discount of 2 1/2 cents per bushel for each one-half per cent moisture content over 14 per cent to cover shrink and drying expenses with cash to be paid by the dealer to the grower for all soya beans on delivery were the main terms of contract negotiated and established under the plan.

Representations were again made by the Ontario Soya Bean Growers' Marketing Board to the Government of Canada for a support price on soya beans in an effort to increase or at least maintain present production of soya beans. The Government of Canada approved a support price of \$2.14 per bushel to the grower on the 1962 crop on a deficiency payment basis. This was an increase of 1¢ per bushel over the support price on the 1961 crop.

The Fresh Peach Plan

1962 volume of 30,473,574 lbs. was down considerably from 1961 but was 98.23% of the five year average. There were 329 licensed producers who sold 9,190,615 lbs. of peaches.

The trend to growers marketing their own produce continued with growers marketing 29.6% of the crop.

Though volume through shippers was only 69.95% of what they handled in 1961, the dollar net to growers was 97.27%. With grower volume higher than in 1961, it is safe to assume that the total net value of the crop in 1962 was slightly higher than in 1961.

Maximum handling charges of 8¢ per basket or 32¢ per master container were set by the Board.

The pressure test was also reduced for Ontario shipments from a maximum 18 lbs. to 15 lbs.

The board exported peaches to the United Kingdom for the third successive season with a substantial increase in volume. Arrangements were made in the spring for the board to supply peaches for the British Food Fair in London. England, to be held August 28th to September 12th, 1962. Two shipments were made totalling 42,770 lbs. net weight of fruit. These were shipped from Montreal via Southampton.

The Board spent \$10,311.61 on advertising in 1962. The main expenditure was \$10,000.00 paid to the Ontario Tender Fruit Institute for promotion of canned peaches in the spring. The Board also supported the Ontario Salad Committee promotion. Along with the Horticultural Experiment Station the board sponsored a peach display in the new Seagram Tower at Niagara Falls.

The Winter Wheat Plan

The winter Wheat marketing Plan is of the negotiating type, it also includes provision for an equalization fee of nine cents per bushel paid by the producer to establish a price support fund to assist in the disposal of wheat surplus to domestic requirements. The unused portion of this fee is returned to the producers at the end of each crop year.

The 1962 crop, resulted in a production of 16,000,000 bushels from 450,000 acres, for an approximate yield of 35.5 bushels per acre.

Negotiations for the 1962 crop established a minimum price level of 25ϕ per bushel above the previous year. The services of the Grain Marketing Division, United Co-operative of Ontario, were again engaged and charged with the responsibility of exporting wheat for the account of the Board. The deduction of nine cents per bushel equalization fee, along with the one cent per bushel licence fee (a total of 10ϕ per bushel), was continued in 1962.

Present indications are that a considerable portion of the nine cents per bushel equalization fee will be used to take up the loss incurred in export on the portion of the 1962 crop surplus to the domestic market.

The Minimum prices already referred to were on the following basis:

July 1962	\$1.65	January 1963	\$1.73
August 1962	1.65	February 1963	1.75
September 1962	1.65	March 1963	1.75
October 1962	1.67	April 1963	1.75
November 1962	1.69	May 1963	1.70
December 1962	1.71	June 1963	1.65

The local board agreed to purchase wheat at the above prices from licensed dealers allowing a maximum handling charge of 10 cents per bushel, and to date have accepted offerings of approximately 900,000 bushels. Moisture discounts of 2½ cents per bushel for each one-half per cent of moisture over 14 per cent were provided for, together with a grade discount of three cents per bushel for Grade No. 3 C.E.

The Flue-Cured Tobacco Marketing Plan

Ontario's 3,980 Tobacco farm owners produced an estimated 180,108,000 pounds of Tobacco in 1962. This production was grown on 116,571 acres. This compares with 1961 crop of 190,815,352 pounds grown on 122, 287 acres.

In 1962 the Ontario Flue-Cured Tobacco Growers experienced severe drought, hail and frost conditions. The acreage allotment in 1962 was set anticipating a yield of 185,000,000 pounds. The average yield per acre was 1,545 pounds with an average price of approximately 51.04¢ per pound. This compares with an average yield per acre of 1,560 pounds and 52.43¢ per pound for the 1961 crop. Estimated value of the 1962 crop was \$92,000,000 compared with the 1961 crop sold at \$92,919,256.00. The quality of the 1962 crop was only fair resulting in a lower average price than the previous three years.

In October 1962, Tobacco minimum grade prices were arbitrated resulting in higher minimum prices for most grades with some lowering in price on a few grades. The arbitration provided for the addition "55" grade in each classification. The arbitrated award placed a minimum price of 10ϕ per pound on non-descript and special factor tobacco. The following grades and prices for the 1962 crop are listed along with price changes from the 1961 Award:

Grade	Price	Price change	Grade	Price	Price change
	(cts./lb.)	from		(cts./lb.)	from
		1961 Award			1961 Award
BL1	65.25	+2.50	CF3	(1 50	
BL2	63.00	+0.25	CF4	61.50	-1.25
BL3	61.50	-0.23 -0.50	CF5	59.75 54.25	-1.00
BL4	59.00	0.50	CF55	50.25	-0.25
BL5	56.25	+1.00	CF6	46.25	+2.00
BL6	49.25	+5.25	CK4	56.50	-1.00
	.,,,	, 0.20	CK5	48.50	0.75
BF2	62.50	+0.50	CK55	37.25	0.72
BF3	61.50	+0.25	CK6	26.00	0.25
BF4	59.00	+1.00			
BF5	54.50	+4.00	CGL3	57.25	-1.25
BF55	48.75	,	CGL4	55.25	-0.50
BF6	43.00	+7.50	CGL5	51.00	+1.50
			CGL55	45.00	·
BK3	56.25	-1.25	CGL6	39.00	+4.50
BK4	49.25	-0.75			
BK5	38.00		CGF5	48.00	+2.50
BK55	29.00		CGF55	41.25	
BK6	20.00	0.25	CGF6	34.50	+4.75
			CCR	52.50	+1.25
BM4	56.25	+2.25			
BM5	50.50	+4.50	XL2	56.75	-1.25
BM55	42.75		XL3	54.75	-0.75
BM6	35.00	+5.00	XL4	50.50	-0.25
		0.50	XL5	43.25	+3.00
BGL3	56.75	-0.50	XL55	38.00	
BGL4	54.50	+0.50	3/1 (22.50	1600
BGL5	49.00	+4.25	XL6	32.50	+6.00 $+2.00$
BGL55	43.50	1500	XF3	47.50 47.25	+1.50
BGL6	37.75	+5.00	XF4 XF5	39.50	+4.25
DCE2	E 1 E 0	1.1.50	XF55	33.75	7-7-25
BGF3	54.50	+1.50	XF6	28.00	+5.25
BGF4	51.75	$+3.00 \\ +5.25$	ATU	20.00	70.20
BGF55	45.00 38.75	5.25	XK4	40.25	0.25
BGF6	32.25	+4.75	XK5	29.75	+0.75
BULO	34.43	77.75	XK55	23.00	
BCR	52.50	+2.00	XK6	16.00	+0.50
DCK	34.30	72.00			
CL1	61.50	-1.25	XGLS	33.00	+6.50
CL2	61.50	-1.25	XGL55	27.75	
CL3	61.50	1.00	XGL6	22.25	+4.25
CL4	60.25	-1.25			
CL5	57.00	-1.25			
CL55	54.25				
CL6	51.75	+0.25			

When the market opened on November 15th, 1962, Tobacco sales were slow at the Tobacco Exchanges. The volume of no-sale tobacco was high resulting in much tobacco being returned to the farms. On November 22nd, 1962, the Tobacco Exchanges were closed. The Tobacco Marketing Board sought Provincial Government assistance. The Provincial Government agreed to guarantee bank loans on no-sale Tobacco, providing the growers agreed to contribute a two cent levy on all grades of tobacco with a minimum grade price to assist in financing the no-sale tobacco. The Tobacco Board held a plebiscite among the growers who overwhelmingly supported the two cent levy and the Provincial Government bank loan guarantee. The two cent levy was authorized under the Federal Agricultural Products Marketing Act.

An agreement was signed between the Ontario Flue-Cured Tobacco Growers' Marketing Board and the Minister of Agriculture of the Province of Ontario covering the terms and conditions under which the Province of Ontario would guarantee bank loans on the no-sale tobacco.

On December 17th, 1962, the Tobacco Auctions re-opened with Tobacco sales being relatively slow with as high as 45% no-sale tobacco at some of the Exchanges. The Tobacco Board made arrangements with a number of Tobacco Packers to have no-sale tobacco packed to the account of the Tobacco Board under the two cent levy and Provincial Government Bank loan guarantee program. Arrangements by the Tobacco Board were made with the Ontario Department of Public Works to store the packed no-sale tobacco in the Aylmer Airport Hangers at Aylmer, Ontario.

On January 2nd 1963, the supervision and inspection authority of tobacco grading was transferred from the Federal Department of Agriculture to the Provincial Department of Agriculture. Every effort was put forward to standardize grading procedures at the three Tobacco Exchanges with the aim of obtaining uniformity on each flat of Tobacco offered for sale. Considerable success in improving tobacco grading in 1962 - 63 was achieved, but improved sorting of tobacco on the farm will eliminate many problems.

No-sale tobacco remained quite high during January 1963, but during the month of February 1963, sales to buying companies improved leaving as low as 6% of daily sales of tobacco to be packed to the Tobacco Board's account. 23,848,445 pounds of the 1962 Tobacco crop was packed to the Tobacco Board's account.

7,176,000 pounds of the 1961 Tobacco crop most of which is still unsold was packed by the Tobacco board under the Federal Agricultural Products Co-operative Marketing Act. This permitted the local board to borrow from the bank 80% of the three year average grade price for any grade of tobacco carrying an awarded grade minimum price which had failed to sell to the buyers at the minimum grade price.

Exports of Canadian Tobacco in 1962 were quite encouraging with 46,803,824 pounds moving out of Canada.

33,563,535

THE TOTAL EXPORTS OF CANADIAN REDRIED LEAF FLUE-CURED TOBACCO, FOR YEARS 1955 - 1961

ENDING YEAR	AMOUNT IN POUNDS
1955	45,534,794
1956	28,555,932
1957	35,742,241
1958	27,734,329
1959	37,853,005
1960	34,473,471
1961	37,383,884

RECORD FOR CANADIAN FLUE-CURED TOBACCO EXPORTS 1962

COUNTRY	POUNDAGE	DOLLAR VALUE
United Kingdom	34,467,125	26,033,123
Ireland	58,580	38,495
Belgium Luxemburg	574,759	196,322
Denmark	77,372	54,161
Finland	151,399	65,581
Germany, West	5,375,070	3,225,832
Netherlands	1,124,009	483,577
Norway	148,710	102,421
Portugal	48,292	17,143
Sweden	89,798	43,270
Switzerland	34,233	14,278
Hong Kong	166,944	36,912
Malaya	34,180	20,622
Pakistan	17,984	13,308
Australia	972,927	977,574
U.S. Ocean	18,919	4,919
B. Guiana	144,111	85,414
B. Hong	9,004	3,772
Barbados	120,150	87,710
Jamaica	686,930	486,655
Lee w Wind	5,621	4,211
Trinidad	988,656	700,988
United States	1,489,051	857,247

46,803,824

Ontario Tobacco Growers are faced with stiff competition from other Tobacco growing countries of the World, i.e. Rhodesia, United States and India.

The Grain Elevator Storage Act

Ontario grain dealers accepting grain from producers for storage for the producers' account are required each year to be licensed to store grain and to comply with the terms of the Grain Elevator Storage Act.

The purpose of the Act is to ensure that the licensed grain dealer has sufficient grain on hand or acceptable warehouse receipts to cover all storage grain and to require that at no time shall the licensed grain dealer use or pledge farmer stored grain for his own account.

The practice of Ontario cash grain growers of making delivery of wheat, soya beans, corn, and white beans to the elevator operator at harvest time and arranging for storage in order to sell at a future date has developed to the point where most grain dealers now provide this service. A periodic inspection of the storage facilities, general elevator condition, and insurance coverage, together with a verification of the record of stored grain against stocks on hand for the account of the producers is provided for and carried out in the administration of the Grain Elevator Storage Act.

The 1962 crop of Ontario Wheat moved at a much improved price over that of 1961 and faulty storage with the licensed grain dealers was considerably reduced. Soya beans and white beans also had a fair market at harvest time, but this did not appear to result in as marked an advance in storage as with Ontario Wheat.

Soils and Crops Branch

In 1962, the Department undertook a promotion program to increase feed grain production in the Province by twenty per cent. Farmers responded and the weather co-operated to the extent that new records were reached for seven crops and for three others their average yields were the second highest in history. Long-term yield records were broken by Grain Corn, Mixed Grain, Barley, Springwheat, Potatoes, Silage Corn, and Sugar Beets. The crops of Oats, Dry Beans, and Buckwheat were the second highest on record. Dry weather in most parts of the Province reduced the yield of the hay crop but assisted farmers in making hay of very high quality.

The record crops obtained resulted in a ten per cent increase in the production of feed grains in 1962-63 — 180,475,000 bushels, compared with 164,212,000 bushels in 1961. The five year average (1956-60) for the same feed grain crops

was 161,482,200 bushels.

Agricultural Limestone Assistance Policy

This policy was continued on the same terms as the previous year, in cooperation with railways and the Federal Department of Agriculture. The Committee approved twelve sources of supply on the basis of the following terms of transportation assistance:

Old Ontario

Carlots 75 per cent of freight up to \$2.50 per ton

Truck loads Five cents per ton per mile one way from quarry to farm,

up to \$2.50 per ton

Northern Ontario

Carlots 75 per cent of "reduced" freight

Truck loads 75 per cent of "reduced" freight less 50 cents per ton

A total of \$68,451.48 was paid on movement of 33,811 tons of which 32,927 tons were moved by truck. This compares with a high of 51,941 tons in 1953. Some 22 carloads moved in 1962, compared to 538 in 1949.

Counties and districts took advantage of this policy in the following order: Kent, Essex, Welland, Haldimand, Prescott, Lambton, Elgin, Renfrew, Norfolk, Lincoln and Russell.

Seed Drill Survey

Conducted to determine by random sampling:

- Grades of seed as established under Regulations of Canada Seed Act, which are in most prevalent use.
- 2. Percentage of pedigreed seed sown.
- 3. Most popular varieties of cereals.
- 4. Extent of Seed treatment for disease.

5. Comparative efficiency of farm cleaning and plant cleaning.

Information is used to determine areas where improvement can best be accomplished by presenting these findings to farmers, seed dealers and operators of seed cleaning plants.

Area 1962 — Southern Ontario Counties of Brant, Elgin, Essex, Haldimand, Kent, Lambton, Lincoln, Middlesex, Norfolk, Oxford and Welland. Results, covering 533 samples:

Grades

Can. No. 1 Can. No. 2 Rejected 15% 40% 45%

These grades show no improvement over previous surveys of these counties. In the 1957 survey, 55% of seed was No. 1 grade; in 1952, 47% was No. 1.

Pedigreed Seed — 16% was of either registered or certified class.

Seed Treatment - 80% treated.

Comparison of Farm and Plant Cleaning

Plant cleaned — 52% No. 1 35% rejected Farm cleaned — 25% No. 1 59% rejected

Varieties - Rodney 59%; Garry 30%; Russell 5%; Others 6%.

Detailed reports were distributed to co-operating farmers, seed cleaning plant operators and extension personnel.

ROYAL AGRICULTURAL WINTER FAIR

Four World Trophies, four Championships and eleven Reserves came to Ontario, as well as a large number of other prizes in 1962:

World Trophies

Rve Wm. Winters, R.R.5, Renfrew Leonard King, R.R.2, Tottenham Small-Seeded Legumes Robert P. Allan, Brucefield Hav Tobacco Glen H. Atkins, R.R.2, Baltimore

Championships

Six-Rowed Barley Garnet B. Rickard, Bowmanville Jack B. Harris, R.R.1, Thamesville Sweet Corn Charles Sisler & Son, R.R.3, Caistor Centre Silage Beans Robert P. Allan, Brucefield

Reserves

Wesley Yellowless, Enniskillen Two-Rowed Barley Robert Pyke, R.R.4, Wolfe Island Stoskopf Bros., R.R.2, Mitchell Six-Rowed Barley Harry N. Gorsline, R.R.2, Demorestville Rye William H. Shanks, R.R.1, Wheatley Soybeans Harold Huffman, Blenheim Small-Seeded Legumes Harold Bryce, R.R.4, Stayner Grass Seed Hay Lou Dixon, Mono Road Allen Ryan, R.R.1, Charlton Potatoes Robert Fotheringham, R.R.3, Seaforth Beans Tunis Follenarr, R.R.1, Delhi Tobacco

Staff members took active parts on committees for seed shows, encouragement of exhibitors, publicity, etc.

The Ontario Soil and Crop Improvement Association

Fifty-six branches in as many counties and districts had total receipts of \$100,949.39, with expenditures of \$75,618.54. The average paid-up individual membership for forty-nine branches was 195, not including branches where all farmers were collectively made members. Each branch may receive up to five hundred dollars from the Department for approved projects.

Committees and Affiliations

Eighteen farmer directors are appointed by area branches to represent as many districts. Directors elect an executive. Active committees give special attention to production and marketing of special crop items.

The Ontario Soil and Crop Improvement Association holds membership or representation on Ontario Federation of Agriculture, Ontario Conservation Council, Advisory Fertilizer Board, Ontario Potato Growers Association, Royal Agricultural Winter Fair, Ottawa Winter Fair, Western Fair, Ontario Beef Pasture Improvement Committee, Canadian Horticultural Council and Ontario Corn Committee.

Annual Meeting

This is always an annual highlight of this organization. In recent years, the three-day event has been held in co-operation with the annual farm equipment show of the Canada Farm and Industrial Equipment Trade Show. Official delegates represented each local branch, with an obligation to "take back" information to local groups. In addition, large numbers of rural people attended, either as commuters or for the duration. The program consisted of reports, panels and addresses by outstanding participants, leaders and authorities. Educational displays were featured. There were separate sessions for registered seed, turnip growers and custom sprayer operators. A large crowd was present on both the first and second days in spite of stormy weather conditions. W. P. Watson, Assistant Deputy Minister of Agriculture, gave for the seventeenth consecutive year, a complete summary of the agricultural situation for the current year.

Addresses and Proceedings are prepared in booklet form and 9,000 copies are widely distributed.

Encouragement to Juniors

The Ontario Soil and Crop Improvement Association is privileged to offer each year the following trophies for the encouragement of young people in field crop work:

4-H Grain Club Challenge Trophy (Ontario Championship)

4-H Potato Club Challenge Trophy (Ontario Championship)

Championship awards in the Agronomy sections at Ontario Agricultural College, Guelph; Western Ontario Agricultural School, Ridgetown; Kemptville Agricultural School, Kemptville.

Awards of Merit

Certificates were presented this year to A. H. Martin, formerly Director of the Soils and Crops Branch, during the Ontario Soil and Crop Improvement Association Branch Banquet in the King Edward Hotel, and also to R. E. Goodin.

formerly Assistant Director of the Soils and Crops Branch, during the Turnip Growers' Meeting of the Ontario Soil and Crop Improvement Association.

The Master Seed Potato Growers' Award for the year went to Ida Maurice, R.R.3. Penetanguishene.

Seed Fairs

Thirty-six seed fairs were held by branches. Many of these took the form of a spring show or crop day. Special programs attracted the interest of farmers in large numbers. Large quantities of seed were displayed and changed ownership. Panel discussions were often featured, and classes for hay and silage were especially well filled.

Number of Seed Fairs	36
Total Prize Money Paid	\$ 11,623.30
Total Exhibitors	1,509
Total Entries	7,840
Total Attendance	26,705
Cereal Seed Offered for Sale	25,717
Forage Seed Offered for Sale	19,433
Seed Potatoes Offered for Sale	35,790 (75-lb. bags)

Joint Projects

In co-operation with institutions and various departments, groups of adjacent counties jointly plan projects and demonstrations, some being on a long-term basis. Instigated a few years ago, these expanding developments are proving successful.

Trefoil Demonstration Projects

This project was begun in 1961, with the object of demonstrating recognized practices in establishing successful stands of trefoil. A second purpose was to establish the place of this long-term legume on soil types not suitable for alfalfa or in field not included in short rotations.

In this project, 23 farmers co-operated in a project involving a six acre demonstration of the varieties Empire and Viking — two acres of each, and a third two-acre lot of Empire Trefoil and Vernal Alfalfa mixture. Climax Timothy was used throughout as the only grass species. Total acreage 138. In addition, 19 farmers co-operated in establishing a five-acre lot of Empire Climax mixture, a total of 95 acres.

These projects were also used by many counties to demonstrate the establishment of trefoil without a nurse crop, using a selective herbicide 2,4 DB to control weeds.

Total acreage in these trefoil demonstrations — 233 acres.

Wide Variety of Demonstrations

The Ontario Soil and Crop Improvement Association provides annually over 1,400 co-operators who assist in conducting a wide variety of projects scattered over almost every township in Ontario. The following few illustrations will serve to show the great variety of projects carried on by local branches:

Forage Crop demonstrations continue to be the most popular in all counties.

Practically every county association reported either the results from tests or observations from grain crop demonstrations designed to compare varieties. Numerous fertilizer trials are reported.

Many corn crop demonstrations were held.

Chemical weed control projects are definitely demonstrating the excellent results that can be obtained when the herbicides are used according to the recommendations.

The thirty-six branches of the Ontario Soil and Crop Improvement Association which have Seed and Forage Fairs offer their members and other farmers the opportunity to hear the latest developments in Soil and Crop Improvement discussed. Some county associations, such as Peel, Perth, Norfolk, Kent and Waterloo, have gone to a one week program to satisfy the demand from their members for first hand information. The fourteen Eastern Ontario branches turn out in large numbers to attend the three day Annual Conference of the Eastern Ontario Soil and Crop Improvement Association.

The Eastern Ontario Soil and Crop Improvement Association held their largest grassland field day at Kemptville Agricultural School last June. Most of the County Associations in Eastern Ontario held one or more drainage and land improvement field days. Brant County had more than 400 at their Corn Day. Land judging competitions are becoming quite popular and were held in Peel, Durham, Lennox and Addington, Wellington, Lambton and South Simcoe.

Practically every county reported a tour or bus trip. Some stayed in their own County, others visited neighbouring counties, others went to the Ontario Agricultural College, while Kent travelled to Purdue University in Indiana.

HIGH YIELD COMPETITIONS

Ontario Pasture Competition

Thirty-six counties and ten northern districts participated in the 1962 Ontario Pasture Competition with a total of 866 farmers competing in their local competitions. The five zone winners placed as follows:

Champions, Yungblut Bros., Fonthill; Runner-up, Garnet Ralph, Richmond; Third, Herb Waechter, Mildmay; Fourth, Ross Moorecroft, Madoc; Fifth, Wallace Laidlaw, London.

In the southern districts of Northern Ontario, Lewis Runnals, Barrie Island, Manitoulin, was placed first and in the far north, A. DeVries, Cochrane South.

The sizeable cash prizes for the winners in the county, district and provincial competitions were donated by The Canadian Seed Trade Association; Cyanamid of Canada; The Plant Food Council of Ontario and Hogg & Lytle Ltd.

500-Bushel Potato Clubs

With 162 growers competing in eight 500-bushel Potato Clubs, Ernest Bradley, Vankleek Hill, Prescott County, took the top honours with a yield of 822 bushels per acre of the Green Mountain variety. The average dry matter of all the entries in the competition was 20.4 per cent, the highest on record.

Seed Cleaning Plants and School for Seed Processors.

Licenses were issued through this branch for 418 seed cleaning plants for the year, as compared to 412 the previous year. Thirty-two were not for hire.

A specially qualified member of the staff visited 87 of these plants on an inspection basis. Some 110 calls were made to other plants to give assistance or to check on operations.

Sixty-five seed processors were given a two-day course in seed processing and other related aspects of seed handling. Instruction was also given to students in

degree and diploma courses in Agriculture. Supervision was given to cleaning seed used for increased production of pedigreed seed and all seed used on College farm.

WEED CONTROL

In the field of chemical weed control, use of herbicides as a production tool increased by over 200,000 acres. Increased acreage of corn was reflected in significantly greater use of atrazine. Also increased was the use of the butyric form of 2,4D. This material has given outstanding results in controlling weeds in legume seedings with resultant improved establishment of forage crops.

Acreages Sprayed — 1962

Cereals	Corn*	Pastures	Vegetables	Misc.	Total
480,950	371,000	58,260	20,160	10,410	940,780

*Corn — 100,000 acres with atrazine, representing a 25% increase in the use of this herbicide over 1961.

Total acreage sprayed in 1961 was 769,453, and in 1956 298,000 acres.

A substantial increase in roadside miles sprayed for weed control was noted in 1962, with 37,000 miles sprayed, compared with 28,000 in 1961.

Administration of Weed Control Act.

1,400 individual orders were issued to property owners to destroy weeds. Of greater significance is the number of urban and suburban lots on which measures were taken, either by the owner or the municipality to have weeds destroyed. The authority for this action is given in Section 13 of the Act, which permits the use of a newspaper notice in lieu of individual orders under conditions set forth in this section. No prosecutions for violations were reported to this office during 1962.

Barberry and Buckthorn

The development and increase of a new race of stem rust has pointed up the importance of Berberis vulgaris and its varieties in relation to stem rust of wheat, oats and barley. At the time of writing, there are no oat varieties carrying resistance to the newest stem rust biotypes. This race is thought to be capable of attaching all types of resistance found in hexaploid oats. Only a few diploid varieties and perhaps one or two tetraploid species were resistant in 1962.

These facts were made known at a meeting of Cereal Breeders in Toronto in November 1962. A preliminary survey of Barberry and Buckthorn was undertaken to determine the location and approximate extent of the two shrubs.

Further meetings were held with Cereal Breeders from Ottawa and Guelph and a projected rust loss over the next ten year period was estimated.

In view of these developments, increased activity in destroying barberry was instigated. County weed inspectors were advised of the problem and the subject was discussed at farm meetings during the winter of 1962-63. Many counties have increased their appropriation for eradication of these shrubs. It is anticipated that further assistance will be undertaken to make a thorough and rapid clean up of barberry and buckthorn.

Basal bark treatment with brushkiller is used and approximately 635 gallons of brushkiller will be used in this way in 1963. In addition, ground treatments with Atlacide and sodium chlorate are still being used. Materials used in 1962 included Dybar, Urab and Urox. The maximum subsidy to a county in any one year is six hundred dollars. Sixteen counties are expected to participate in the fifty per cent subsidy offered.

Leafy Spurge

Assistance in eradication of leafy spurge is on the same basis as buckthorn, with a maximum per county of \$250.00 for chemicals per year.

Infestations of spurge are limited but are known to occur to some degree in eight counties. Control programs are under way, using such chemicals as D Bor, brushkiller and 2,4-D. Eradication of spurge is a high cost operation by any means yet discovered, and the assistance program is intended to prevent further spread and eventual elimination of this weed.

The branch pays fifty per cent of salary and expenses of County Weed Inspectors.

FOUNDATION SEED COMMITTEE

Fall Sown Crops

Talbot — a new wheat variety Talbot was licensed in 1962 and nine foundation growers were each supplied with 20 lbs. of breeder's seed, sufficient for the establishment of a foundation plot. In addition, thirty-three growers were supplied with two or three bushels of first generation Talbot. This should supply for seeding in the fall of 1963, the crop from over 50 acres of second generation Talbot. In the fall of 1964, the nine growers of foundation seed should be prepared to offer first generation Talbot.

Genesee — two growers received breeder's seed of this variety, making a total of five foundation growers of Genesee.

Dover Barley — No breeders' seed was available but six growers received three bushels each of first generation seed.

Spring Sown Crops

Breeder's seed was	distributed as follows:	
Herta Barley	1 grower	1 bushel
Keystone Barley	1 grower	1 bushel
Rodney Oats	2 growers	2 bushels
Garry Oats	1 grower	1 bushel
hite Beans		

White Beans
Michelite 62 1 grower 30 lbs.
Saginaw 1 grower 30 lbs.

Flax
Marine 1 grower 1 bushel

Canadian Forage Seed Project

Distribution of Foundation and Breeder's Seed of varieties under this project

in Ontario was as follows	•		_	** ** 11
Ottawa Red Clover	Breeder's Seed	300 lbs.	-	\$2.00 per lb.
Climax Timothy	Breeder's Seed	290 lbs.	(a)	.60 per lb.
	Foundation Seed	6,550 lbs.	@	.45 per lb.
La Salle Red Clover	Foundation Seed	3,880 lbs.	(a)	.75 per lb.
Vernal Alfalfa	Foundation Seed	250 lbs.	(a)	1.00 per lb.
Rideau Orchardgrass	Breeder's Seed	125 lbs.	@	.60 per lb.

During the year, the former Director, A. H. Martin, retired and was succeeded by D. L. Parks. The branch was re-organized to include soils advisory services as well as field crop advisory services.

Information Branch

The Information Branch is responsible for co-ordinating the information program of the Department. Current information on department programs and services is disseminated for press, radio and television use. The Branch also administers the publications program of the Department.

To carry out its program the Information Branch secures information from personnel in all branches and institutions of the Department and from other sources.

News Releases

Two weekly news release services, "Farm News" and "Consumer News" provide useful farm and consumer information to the editors of Ontario weekly and daily newspapers, farm magazines and other publications, and to farm directors of Ontario farm products, extension personnel, and persons interested in agriculture.

(1) "Farm News"

During the year 161 "Farm News" articles were prepared and provided to each of nearly 1,000 editors, writers, and agricultural specialists. Eighty-six special news releases were prepared for the Press Gallery.

(2) "Consumer News"

During the year 225 "Consumer News" articles were provided to each of nearly 850 editors, writers, and homemaking specialists.

Homemaking articles dealt with Ontario grown products, food and nutrition, and home management.

Gardening articles, designed for the home gardener, dealt with the care of lawns, trees, and shrubs, and fruits and vegetables in the home garden.

Radio Services

Three monthly radio tape recordings services, a Farm Radio Service, a Consumer Radio Service, and a Farm Safety series provided Ontario radio stations with specific information on a variety of topics.

During the year 144 Farm Radio programs were prepared and on request sent to an average of 17 Ontario stations each month for a total of 1,766 recorded programs.

The Consumer Radio Service included the preparation of 132 recorded programs. An average of 22 Ontario radio stations per month used these recordings for a total of 2,904 recorded programs being sent out during the year.

A total of 180 Farm Safety Spots were recorded and distributed to 33 Ontario radio stations for a total of 5,940 recorded programs.

Television Services

Due to the lack of personnel only 7 TV film clips were produced and distributed to 3 TV stations, during the year.

Publications

A Departmental Publications Committee reviews matters pertaining to departmental publications and recommends changes in policy, where changes are deemed necessary to improve the standard of any publication.

Thirteen Sub-Committees, divided according to subject matter, meet bi-annually to review the need for preparing new publications and revising or reprinting current publications. Each Sub-Committee chairman is responsible for selecting the author or authors for preparation of new publications or revising current publications. The Information Branch administers the publications program of the Department and is responsible for the editing, printing and distribution of departmental publications and annual and special reports.

The following publications were produced during the year:

79 extension publications with a total of 698,900 copies printed;

12 annual and special reports.

The following information on the distribution of publications and the answering of requests for information is given:

Number of individual letters	19,412
Number of telephone requests	4,610
Number of requests made in person at office	2,952
Total number of individual requests	26,974

In addition to answering these requests, departmental personnel are kept notified of new, revised, and reprinted publications. Extension personnel are sent copies of these publications as soon as they arrive from the printers.

Special Services

A close relationship between the Information Branch and members of press, radio and TV is maintained. In addition to the weekly articles in "Farm News", 23 full-length articles written by members of the Department were supplied to farm writers and weekly and daily newspapers. These were widely used, especially in farm and spring editions of newspapers.

Over 400 photographs of special events and Department personnel were distributed to newspapers and TV stations.

Assistance and co-operation is given to members of the press and farm writers whenever they seek information on departmental policies and programs.

The Junior Farmer Loan Branch

The fiscal year ending March the 31st, 1963, has resulted in the payment of principal amounting to \$1,819,751.51. This included repayment in full of 159 loans. From a high of \$28,557,459.00, the outstanding principal has now been reduced to \$18,271,681.46. Collections have been well maintained and arrears at the end of March amounted to only 2.53%. Disastrous floods in southwestern Ontario in the early part of 1962 caused considerable loss to some of our borrowers but not one of those thus affected found it necessary to apply for special consideration in connection with payment of the annual instalment. Only one farm was taken over by the corporation through sale proceedings bringing the total number of farms taken over since 1952 to 13.

Since the first press announcements of the Junior Farmer Establishment Amendment Act, known as Bill 43, there has been a lively interest and a steady flow of enquiries from all parts of the Province. A substantial number of these have been from mortgagors with excellent payment records, who have reached the point where they found it necessary to increase the size of their holdings. Most of these are persons who are still within the age limits to benefit under the new legislation or have a wife who is eligible. Many have expressed satisfaction at the treatment they have received in the past and are anxious to use the same lending source that was responsible for their original esablishment.

A number of enquiries have been received about Group Life Insurance for borrowers and I am happy to report that consideration is being given to the establishment of a low-cost plan that will be acceptable to persons receiving loans. It is interesting to note that over the past 11 years, out of a total 3,846 loans there have been only 13 deaths and in 4 of these cases the widows are carrying on.

Under Bill 43, The Junior Farmer Establishment Loan Corporation is empowered to make loans of up to 80% of the appraised value of the farm, maximum loan \$20,000. In addition, the Junior Farmer may apply to his bank for a loan of up to \$5,000, for the development and operation of the farm with a bank guarantee by the Provincial Government.

In the case of the family farm, defined as a farm operated by a Junior Farmer and one or more persons related to him by blood relationship, marriage or adoption, a loan of up to 80% of the appraised value of the farm or farms may be made, but not to exceed \$20,000. In addition, a bank guaranteed loan of up to \$10,000 may be applied for to be used for operating and developing the farm and such loans will be available throughout the period of the mortgage at current bank interest.

Applicants must be between the ages of 21 and 35 years of age, have been resident in Ontario for at least three years immediately preceding the application, with a minimum requirement of three years' experience in farming and the intention to farm on a full-time basis. He may apply for a loan to assist in the purchase of farm land, the erection and improvement of farm buildings, to pay off charges and encumbrances against the land, to pay debts for productive agricultural purposes, for drainage, to purchase live stock etc. The borrower must be prepared to give a first mortgage on the farm lands owned and operated by

him. Farm lands offered as security must be provided with the necessary farm buildings. The interest rate on mortgages will be 5% per annum. The loan cannot be for longer than 30 years but the borrower may select a shorter term. All loans may be repaid in whole or in part at any time without notice or bonus.

The new legislation is intended to give increased recognition to the Junior Farmer as an individual, and it has also been greatly expanded to give recognition to the family farm and its place in Ontario Agriculture.

Emphasis in the future is to be directed to encourage the maintenance of the family farm and all the resources of the Extension Branch will be available both to the Junior Farmer and to the operator of the family farm. The Bill gives recognition to three important aspects of farming in Ontario today, first an increase in the availability of credit at a fair interest, the availability of farm business management help, and possibly the most important consideration of all, the preservation and strengthening of the family farm unit.

Marketing Development Branch

Established in 1961, the Marketing Development Branch was designed to develop markets across Canada and overseas and to encourage producer marketing boards and industry to develop existing outlets and to find new outlets for Ontario food products. Agricultural marketing development programs are becoming increasingly essential for an industry whose capacity to produce has apparently outstripped the available profitable markets. The need for market development has increased as a result and is being directly related to farm output, population growth and rates of consumption of agricultural products, especially those in abundant supply. As a result, merchandising, advertising and other forms of promotion and development are the principal approaches in market development in order to create awareness and to inform the buying public how they may use and benefit from the consumption of the promoted product. The following were the highlights of the development programme conducted during the year.

Ontario Agriculture Export Trade Promotion

A concentrated effort was made to widen Ontario's overseas markets for farm products. It is gratifying to report that considerable progress has been made in this connection and that a representative of the Branch has now been permanently stationed at Ontario House, London, England, to service and to encourage the sale of Ontario agricultural food products in the United Kingdom. The Branch participated in Britain's famous Food Fair, London, England, August 28th to September 12th, 1962, and the equally famous British Ideal Home Show, London, England, March 3rd to 30th, 1963. A wide range of Ontario food products were exhibited, sampled and sold at these two Exhibitions in small consumer units. Judging from the number of British housewives who made repeat trips to the Ontario stands and who requested the names of retail stores where Ontario food products could be obtained, the response has been favourable. Exports during 1962 reached an all-time record, Fresh fruit export increased 24 per cent, fresh vegetable 53 per cent, processed vegetable 46 per cent and processed fruit 116 per cent over 1961. In addition exports of flue-cured tobacco, cheese and honey showed encouraging increases.

The gains recorded in export sales of Ontario consumer food products to the United Kingdom during the past three years indicate there is no question that Ontario has a broad line of superior flavoured food products that are gaining in popularity in great Britain.

Increases over a three-year period are shown in the following tables:—

Canned Fruits and Vegetables

	1960	1961	1962
Pears, canned, lbs.	447,954	1,848,751	7,135,365
Peaches, canned, lbs.	319,110	393,396	1,619,633
Fruits, canned, lbs.	99,333	516,053	4,537,955
Corn, canned, lbs.	486,406	3,067,198	5,952,807
Tomato juice, lbs.	4,527,928	8,721,975	10,424,886
Vegetables, canned, lbs.	159,639	547,115	3,641,671
Pickles and Relishes, lbs.	123,967	1,213,731	4,240,555

Fresh and Dried Vegetables			
Beans, dried, lbs.	2,186,650	10,008,200	31,807,832
Carrots, lbs.		7,200	2,354,244
Onions, lbs.		12,189,675	28,979,135
Peas, whole, lbs.	132,680	5,479,648	10,687,045
Cheese, cheddar, Ibs.	17,726,000	18,321,600	26,057,600
Honey, lbs.	1,131,832	2,678,548	2,781,254
Flue-cured Tobacco, lbs.	28,569,042	33,632,327	34,467,125
Meat Products			
Fancy Meats, lbs.	8,418,000	6,341,900	7,131,000
Poultry, frozen & cooked, lbs.		5,100	45,200
Meat preparations, canned, lbs.	202,539	337,740	655,993

The Committee on Vertical Integration

This fact-finding Ministerial Committee appointed in 1962 was comprised of members of the Ontario fruit and vegetable growing and processing industries to study the extent of vertical integration in the horticultural industry, the reasons favouring and not favouring vertical integration and suggestions for improving the situation from the point of view of the fruit and vegetable producer.

In concluding its first series of hearings and discussions, the Committee agreed on a number of recommendations to deal equitably with the situation created by processors leasing land to produce fruit and vegetable crops for processing, all of which were adopted by the Government of Ontario during 1962. One of these suggestions proposed the formation of an Ontario Food Council, comprised of representatives of the producers, processors, distributors and consumers. Organization of this Council is being proceeded with by the Department during 1963. Its objective will be twofold; one to advise the Government on general problems of concern to agriculture and the food industry, and second to provide a meeting place for these four groups to enable a greater understanding of each other's problems.

The Ontario Tender Fruit Institute

The Director of the Branch is Chairman of the Ontario Tender Fruit Institute, comprised of equal representation from the Ontario Tender Fruit Growers' Marketing Board and the Ontario Food Processors' Association. Purpose of the Institute is to promote the wider distribution and increased sales of Ontario canned fruit. Previously this work had been carried out by the fruit grower and fruit processor groups separately. The Institute's budget, now exceeding \$75,000 yearly, is provided by the fruit growers and fruit canners each contributing 50 cents per ton on the quantity of fresh peaches, pears, plums and sweet cherries processed annually. The Ontario Department of Agriculture contributes on the same tonnage basis to a maximum of \$15,000 per year. With the Institute's program now consolidated, it is 75 per cent directed at the domestic market through the press, radio and television media through the use of coloured film and 25 per cent at the export market through participation in United Kingdom trade exhibitions and food fairs.

The Ontario Farm Products Containers Act

The Director of the Branch is the Inspector of the Ontario Farm Products Containers Act under the authority of which a licence fee of one per cent of the net selling price of all wooden, paper and plastic containers manufactured and

used to market fresh fruits and vegetables produced in Ontario is levied. The funds collected by this means, which totalled \$41,853.51 during the year, are remitted to the Ontario Fruit and Vegetable Growers' Association to cover its expenses in promoting the wider distribution and increased sales of Ontario fresh fruits and vegetables. The total fees received to-date by the Association since the levy was imposed total \$477,329.46.

The Ontario Potato Marketing Policy Committee

The Ontario Potato Marketing Policy Committee, comprised of representatives of the potato growers, packers and distributors, with the Chairman from the Branch, met several times during the year and is making definite progress toward its objectives. Purpose of the Committee is to study and make recommendations to the Ontario potato industry on grade and quality standards, market information and price levels, promotion and advertising programs and to develop a provincial potato storage warehouse policy.

The Farm Products Marketing Act

During the year the Branch was requested to undertake several incidental activities related to a number of prepared producer marketing plans under the Farm Products Marketing Act. In particular, these included addressing several meetings of interested commodity producer groups in connection with the proposed overall milk marketing plan.

The Ontario Food Terminal Act

The Director of the Branch is Chairman of the Ontario Food Terminal Board administering Toronto's modern wholesale fruit and produce terminal market under the authority of the Ontario Food Terminal Act. The facilities provided include two produce warehouse buildings, a Farmers' and Truckers' Market, office space, cold storage plant, railway facilities, public car and truck parking facilities, all contained within a fifty acre market site.

Since the terminal market came into operation in 1954, it has experienced an increase of 3 per cent to 5 per cent each year in the volume of business done through the various facilities located on the 50-acre site. While warehouse and office space appear adequate at the present time, the limits of the cold storage plant and the Farmer's Market were taxed beyond their capacity for the first time in 1961 and 1962, and business on a number of days had to be refused. On several occasions during the past two years, the capacity of the railway teamtrack yard at the height of the importing season during the winter months has been unequal to the number of cars awaiting delivery. As a result, a team of economists from the Canada and Ontario Departments of Agriculture and a leading firm of Toronto architects has been engaged by the Ontario Food Terminal Board to study and report on the advisability of a major expansion of a number of the multi-million dollar facilities at the Ontario Food Terminal.

The Ontario Live Stock Branch

The services of the Live Stock Branch extend over a wide field of activities embracing practically every phase of the live stock industry. Administration of all acts, policies and programs is an integral part of the Branch dealing as they do with matters pertaining to improved and healthier live stock in the Province of Ontario.

Ontario still maintains its lead in the Dominion as the largest live stock province, and naturally has assumed the role of making every attempt to be the most advanced in all fields. Sales of live stock from Ontario continue to command a preferred market in several foreign countries, and at the same time programs which have been developed here provide a market for live stock in other provinces. In beef cattle particularly, Ontario has led the way in its programs pertaining to performance testing and other related policies.

In the field of swine, Ontario enjoys having the greatest number of breeders, the greatest number of participants in R.O.P., as well as the largest marketings of any province.

During the past year, particularly in dairy cattle, exports were made to Europe, South America, Mexico, U.S.A. and several other countries. The reputation of Ontario live stock both from the standpoint of health and production is such that outside buyers are constantly coming to this province for their stock. Efforts have been made to make Ontario the healthiest area in Canada by eliminating disease in all classes of live stock. At the present time the few remaining districts and counties in our health program are undergoing the Brucellosis test or are about to begin. This should result in a short time in Ontario being completely accredited for T.B., certified for Brucellosis, or in other words "clean".

Increased interest has developed in the control of swine diseases, particularly with the development and participation of those interested in Specific Pathogen Free herds. Other uncontrollable diseases such as rabies involve claims on a considerable scale under the indemnity assistance policy. At the moment indications point to quite a high number of losses owing to the fact that the epidemic continues with no signs of abatement.

In the activities of the Live Stock Branch work can best be divided into two particular fields, namely, administrative and educational, with the former dealing mainly with the enforcing and supervising of all acts and policies involving live stock. Educational work deals with all live stock promotion designed to improve through advice, test performance and health measures beneficial to the live stock owner.

Artificial Insemination Act

The expansion in A.I. continues with an annual increase in breeding ranging from .5 to 2% above that of the previous year. Service to cattle owners is now available in practically every area in the province through existing units. A trend was introduced during the past year which might, and possibly will, lead to more efficiency in the operation of A.I. units. In an effort to do this in Eastern Ontario, the Quinte and Kemptville Units amalgamated and are now known as Eastern Breeders Inc., with headquarters at Kemptville. This will necessitate a rearrange-

ment in management, but will in all probability result in fewer bulls having to be kept, and more efficient service.

During the past session of the legislature, the Artificial Insemination Act, 1960, was revised, giving more control by regulation to the operation of the Act by the Department and of A.I. in general. It now remains for all operators and technicians to be licensed. Regulations have been prescribed for the standard of qualifications of technicians, licences and other requirements considered essential to the industry. Assistance in the form of grants to the purchasers of bulls continues as does also the assistance in providing service in Northern Ontario. Twenty per cent of the purchase price up to a maximum of \$600.00 is allowed on the purchase of approved sires. In the districts of Northern Ontario the Live Stock Branch pays a subsidy at the rate of \$2,00 per cow inseminated. This assistance makes possible the operation of artificial centres in areas where normal costs would be almost prohibitive. By providing this assistance the breeding fee is kept at a nominal sum whereby any livestock owner might make use of A.I. During 1962 licences were issued to 15 A.I. Centres, 8 of which are in Old Ontario, with the remainder located in the northern districts. Some 298 technicians are now licensed with additions being constantly made as services increase. Arrangements have been made between existing units for the distribution of semen from practically any bull of any breed. Frozen semen makes this possible.

Centralization of breeding programs might provide for further co-operation between units. The utilization of sires in any service is greatly enhanced through the more efficient handling of semen, thus making available greater supplies at all times.

During the year a Central Semen Storage Laboratory was designed and is now being erected at the Ontario Veterinary College, Guelph. This building, when completed, will provide adequate facilities for all existing units in maintaining any quantity necessary. Supplies of frozen semen are now being shipped from Ontario to many other points in the Dominion. During 1962, 506,851 cows were inseminated.

The following table shows the number of cows inseminated in the various centres in 1962.

Name of Centre	No. Cows	No. Cows	Increase
	inseminated 1962	inseminated 1961	or Decrease
Oxford & District C.B. Ass'n.	131,642	127,570	+4,072
Central Ontario C.B. Ass'n.	113,100	111,384	+1,716
Waterloo C.B. Ass'n.	78,802	82,350	- 3,548
Eastern Breeders Inc.	115,316	111,030	+4,286
Hamilton District C.B. Ass'n.	39,999	43,648	-3,649
Lambton C.B. Ass'n.	14,063	13,737	+ 326
Essex C.B. Ass'n.	8,245	7,880	+ 365
Rainy River C.B. Ass'n.	2,029	2,136	107
Temiskaming C.B. Ass'n.	2,142	1,852	+ 290
Cochrane C.B. Ass'n.	805	693	+ 112
Algoma C.B. Ass'n.	130	137	7
Dryden C.B. Ass'n.	335	256	+ 79
Porcupine C.B. Ass'n.	243	241	+ 2
	506,851	502,914	+3,937

The number of cows bred to bulls of the various breeds follows:

	No. Cows	No. Cows	Increase
Breed	inseminated 1962	inseminated 1961	or Decrease
Ayrshire	9,774	10,480	- 706
Guernsey	12,088	12,613	- 525
Holstein	293,087	296,882	- 3,795
Jersey	22,191	26,925	- 4,734
D. P. Shorthorn	7,365	8,340	- 975
Red Poll	330	317	+ 13
Angus	15,786	13,171	+ 2,615
Hereford	114,649	99,906	+14,743
Shorthorn	19,805	22,287	2,482
Charolais	5,906	6,263	- 357
Brown Swiss	596	369	+ 227
Unspecified	5,274	5,154	+ 120
	506,851	502,707	+ 4,144

The Stallions Act

All stallions of the Clydesdale, Percheron, Belgian, German Coach, Canadian and Suffolk breeds are required to be enrolled before standing for service. Each stallion must be inspected and approved before becoming eligible for enrolment. After inspection, a certificate is issued in forms A, B, or C with those in Grade A and B eligible for a premium of \$3.00 and \$2.00 respectively for each mare left with foal. Premiums do not apply on Grade C horses.

In 1962-63 total payments under this policy were \$10,468.00 of which \$9,198.00 was paid to owners of 110 Grade A stallions and \$1,270.00 to owners of 26 Grade B stallions. Premiums paid by the province are duplicated by the Canada Department of Agriculture. The number of stallions enrolled showed a very slight increase of only two over that of 1961. There were 193 stallions enrolled, of which 68 were Percheron, 76 Belgian, 36 Clydesdale, 10 Canadian, 1 German Coach and 2 Suffolk.

Live Stock Community Sales Act

Since July 1959 this Act has been in force as a means of insurance to quite a large portion of the live stock industry. Sales operators are defined in two categories. Class 1 — those whose operations are not more than \$75,000 gross per sale are bonded for \$10,000 and are required to pay a \$200.00 licence fee. Class 2 — those whose operations are more than \$75,000 gross per sale are bonded for \$20,000 and are required to pay a \$400.00 licence fee. Protection is thus afforded owners of live stock when an operator defaults in making settlement. Insurance on all live stock is also a requirement under the Act, thus affording protection against loss by fire. The Ontario Live Stock Branch provides every sale with the services of a Registered Veterinarian whose duty it is to inspect all live stock delivered to the Community Sale, for health. Only live stock that in the opinion of the veterinarian is free of disease may be offered for sale back to the country, while animals of marketable age that show evidence of disease which will not affect their usefulness for meat may be sold for slaughter.

From the following report — January 1st to December 31st, will be noticed an increase in the number of live stock being sold through community sales. One ex-

ception is that of hogs which were below the 1961 figure. This can be attributed to an outbreak of hog cholera which resulted in a quarantine being placed on every Community Sale by the Health of Animals Branch. For a period of several weeks no hogs were allowed to be sold. If this outbreak had not occurred, a considerable increase in volume would certainly have been made. The number of bulls sold back to the country is of interest.

Class of Livestock	No. Head Sold, 1962	2	
Steers for slaughter	87,341		
Heifers	69,656		
Cows	101,923		
Bulls	8,639		
Total slaughter cattle			267,559
Cows sold back to the country	35,617		
Heifers	48,104		
Stockers or feeders	121,604		
Bulls	3,208		
Total cattle sold back to the country	у		208,533
Veal Calves	181,624		
Bob Calves (3-10 days old)	116,284		
Total			297,908
Weanling pigs	500,405		
Feeder pigs	362,383		
Sows	31,327		
Stags & Boars	12,652		
Market Hogs	8,090		
Total			914,857
Horses	5,331		5,331
Sheep & Lambs	39,112		39,112
			1,733,300

The Brucellosis Act

This Act deals with two specific phases in relation to live stock and applies to cattle only. The first phase deals with that of calfhood vaccination. All female calves are, under the Act, required to be vaccinated between the ages of 4 to 10 months.

Under the Ontario Department of Agriculture the Act and Regulations owners must vaccinate all heifer calves at the proper ages. The Department has made provision to pay for the cost of vaccination to registered veterinarians who provide this service.

Export animals are required to be vaccinated before being allowed into other countries. This is important from the standpoint of health in our own market, and equally important if we are to continue in the export trade that has been built up over the years.

During 1962 a total of 413,638 calves were vaccinated, slightly less than in 1961. Total cost of vaccinations and supplies amounted to \$516,169.29 being practically the same amount as the year previous. Of the 480 veterinarians registered since the inception of the Act, 341 officially vaccinated calves in 1962.

Anaphylactic Shock occurs infrequently following vaccination, and was responsible in 1962 for the death of 50 calves valued at \$3,800.00. This ratio is quite low in relation to the number of calves vaccinated, being approximately 1 in every 8,200.

Brucellosis Control and Certified Areas

When Brucellosis control was first initiated in 1957 by the Federal Health of Animals Branch at Ottawa, the Ontario Department of Agriculture undertook an intensive campaign to have this disease eradicated. Each county was required to conduct a canvass in which 66-2/3 of the cattle owners were required to sign in favour of having this work done. Every county and district in Ontario, with one exception, was canvassed and at the present time one district remains without the necessary petition. As soon as an area becomes gazetted, and once the blood test commences it then becomes known as a Brucellosis Control Area, and subsequently becomes a Certified Area, when the percentage of infected cattle does not exceed 1% and the number of herds does not exceed 5% of the herds in the area. Certification is then given for a period of three years. All counties in Old Ontario have been certified except the county of Simcoe. Testing is under way in that county at the present time and will soon be completed. The district of Parry Sound is also under test at present, after which Muskoka will be tested. Haliburton, Nipissing, Sudbury and Temiskaming districts remain to be tested with the district of Cochrane requiring petitions for the test. Ontario is now in the position of meeting practically every health requirement of any country in the world.

Warble Fly Control Act

Treatment for the control of warble fly was carried out in 272 townships who operate by by-law under this Act. According to inspectors' reports there were 1,002,828 cattle treated during the month of April and 796,514 cattle treated during the month of May. Experimental work was carried on during the year with the use of new products for the control of warble grubs. These systemic insecticides have been registered for use in Canada, and can be administered as a spray, as a pour-on or as a bolus. Excellent results were obtained and it is reasonable to assume at the present time that new controls now on the market will be more widely used as their efficiency becomes known.

Under the existing Act, each township is required to appoint an inspector or inpsectors for the purpose of making certain that all grub infested animals receive treatment. The Ontario Department of Agriculture makes available assistance to the townships in the form of 50% of the cost of the Derris powder purchased by municipalities and 50% of the salary and travelling expenses of inspectors.

The total amount paid in the form of grants to townships was \$75,015.29.

Provision was made in the Act three years ago whereby townships may repeal a by-law. Since this provision was incorporated only three townships have exercised this right. Each year new townships are undertaking control measures in an effort to present their cattle in a more healthful condition to buyers shipping export.

Dead Animal Disposal Act

Following reports which indicated that meat from dead animals had been sold for human consumption, the Dead Animal Disposal Act was passed in July, 1960.

Ontario was the first province in Canada to adopt legislation to control this type of business. During the year 1962 two full time inspectors were employed to supervise all operations and they are constantly making checks on operators of Receiving Plants, Rendering Plants and on all collectors of dead animals.

For purposes of more direct control, the Act and Regulations were amended in 1962 so that every licensed operator of a Rendering Plant or Receiving Plant is now by regulation required to denature meat before being frozen or stored or before being transplanted from the plant. In the operations of licensed collectors, receiving plants or rendering plants records must now be maintained on prescribed forms supplied by the Department. Operators of licensed plants are supplied with a stamp "NOT FOR HUMAN CONSUMPTION" to be applied to containers in which meat is packed.

Under the Act all persons engaged in the business of collecting or processing dead or fallen animals must be licensed and are classed as follows:

- (1) Collector means a person engaged in the business of collecting dead and fallen animals.
- (2) Receiving Plant is a person who operates a plant on premises to which dead animals are delivered for the purpose of obtaining the hide, skin, fats, meat or other products of dead animals.
- (3) Rendering Plant means a person who operates a plant at which dead animals are processed into hides, meat, bone meal or inedible fats.

Inspectors with the assistance of the Ontario Provincial Police enforce this Act. Charges have been laid and convictions made during the year on 5 cases. On charges laid under the Food & Drugs Act, Statutes of Canada, during the year 1962, the R.C.M.P. were successful in having convictions registered against individuals who were holders of licences under the Dead Animal Disposal Act. In 1962 the number of licences issued were:

Rendering Plants	6
Receiving Plants	42
Collectors	64

The Dog Tax and Cattle, Sheep and Poultry Protection Act

Under this Act every municipality is required to tax dog owners at rates equal to or above those specified therein. In addition the municipality is obliged to reimburse owners for loss of cattle, sheep or poultry as a result of attacks or damage by dogs. Each township appoints a valuer whose duty it is to assess the loss to the sheep owner and who then submits to the municipality a statement. If either the municipal council or the owner of the live stock is dissatisfied with the award of the local valuer, the dissatisfied party has the right to appeal to the Live Stock Commissioner who in turn must appoint a valuer to investigate the case and whose valuations shall be final and conclusive. In the majority of cases where losses are sustained as a result of attacks by dogs, settlements are made at the municipal level.

During the year 1962 two appeals were received by the Commissioner and settled. Several complaints, however, were received from parties interested in appealing, but after communicating with the municipality in question, an understanding was reached so that the appeal was not presented.

Dairy Herd Improvement Associations

Dairy herd improvement work has been carried on for a period of ten years in approximately 45 counties. In the development of this program two or three special phases were considered. One was that of providing a recognized system of milk recording for the owners of grade or mixed herds, the second was to provide members with information concerning their costs of production, and the third was that of making available information for the purpose of providing sires in A.I. Units, thus enabling unit operators to discard or retain certain sires which would exert a tremendous influence on members herds. With over 500,000 cows being bred by means of artificial insemination it is understandable how far reaching the effect of a sire performance program might be in determining what is best for the various units. The basis of proof gives a proper comparison of unit daughters against daughters of other bulls in the same herds. Information, therefore, in this particular field is not only of benefit to D.H.I.A. members but to every member who uses the services of A.I. Units. Eighty per cent of the D.H.I.A. members use A.I. in their breeding program, and 70% of our largest pure bred herds are sired by unit bulls.

Since changes were made in 1960 whereby members who owned over 80% pure breds were eliminated by either dropping out or going on the Combined Plan for one year, it was felt that there would be a drop in production owing to the fact that some 200 new herds would be taken on. To indicate what improvement was made after the pure bred herds were eliminated production records have reached a point close to that of three years ago. Every encouragement is given to herd owners to use their summary reports in order to eliminate the low producers, and also to enable them to obtain replacements.

In 1962 two associations were disbanded owing to the fact that a sufficient number of grade herds could not be obtained to keep up the required membership. One new association was started in Perth County. One association was dropped owing to the fact that an insufficient number of members could be obtained for reasons other than that of having pure breds.

It has been noted over the years that more attention is being paid by members to their breeding operations and also to their feeding and cost work.

Following is a summary of the D.H.I.A. program for the year 1962:

Number of associations	59
Number of herds enrolled	1,318
Number of cows	33,957
Average number of cows per herd	26
Number of certificates issued during the year	28,215
Number of cows qualifying for gold or red seal certificates	22,058
Percentage of cows qualifying	78.2
Average milk production per cow	9,927
Average fat production per cow	362
Average butter fat test	3.65

Advanced Registry Policy for Beef Cattle

This policy is designed to obtain information about the performance of young beef bulls that appear destined to become future herd sires. Under the policy, bulls are started on a feed-gain test when between $7\frac{1}{2}$ and $8\frac{1}{2}$ months of age. The test covers a minimum period of 140 days, during which time the bulls are on full feed, thus are given ample opportunity of indicating their ability to gain.

The majority of the bulls are tested on the premises of the owner, however, a number of bulls are tested at one of the three test stations which are located at Ridgetown, Guelph and Kemptville. During the past year bulls were on test every month of the year at the station at Guelph. However at Ridgetown bulls were on test during the winter months and at Kemptville during the summer months.

When tests are made at one of the stations records of feed consumption are maintained. The results indicate that there is a high correlation between rate and economy of gain. Thus it can be assumed that in most cases, the bulls that make the fastest gains make the cheapest gains.

During the year 938 bulls, representing 4 breeds and owned by 239 breeders completed tests. A summary of the results follows:

Number of Bulls	Tested			Participating
Breed	At Stations	At Home	Total Tested	No. Breeders
Aberdeen Angus	8	45	53	20
Galloway	. 0	2	2	1
Hereford	104	579	683	149
Shorthorn	25	175	200	69
Total		**************************************		
	137	801	938	239

	137	801	938	239
Average Performan	nce of Bulls	Completing Tests		
No. of Bulls				938
Average adjusted	weaning wei	ght (205 days)		510
Average starting w	eight			577
Average total gain				374
Average daily gain	on test			2.64
Average final weigh	nt			952
Average yearling w	reight (365)			899
Average weight per	day of age			2.46

During the year under the Herd Test Plan which was initiated a year ago, 20 herds were on test during 1962. Under this plan weaning and yearling weights are taken on all progeny in the herd and a report issued to the owner.

A summary of the results is shown in the following table:

			Average Adjusted
Weaning	Number		Weaning Weight
Bulls	488		486
Heifers	592		421
Steers	78		466
		Av. Wt.	Av. Yearling
Yearling	Number	Day of Age	Weight
Heifers	266	1.61	589
Range of Average Weaning Wei	ght 216 — 659		

In addition to the testing of young bulls and the herd test plan, the Quality Meat Sire Policy was initiated in 1962. Under this policy 10 or more steers and/or heifers must be slaughtered and their carcasses scored in order to complete a test. The 10 or more animals must be by the same sire, but each out of a different dam.

394 --- 986

The sire of the animals must be registered in the herd book of a recognized beef breed association, but the dams may be pure bred or grade, provided that all pure bred dams are members of the beef breeds and all grade dams show substantial evidence of beef breeding. The 10 or more animals must be slaughtered within a period of three consecutive years.

All animals in the test group are slaughtered at a plant designated by the Secretary of the Ontario Beef Cattle Performance Association before reaching 480 days of age and settlement is made by negotiations between the owner of the animal and the operator of the packing plant. All carcasses are scored by the grading staff of the Canada Department of Agriculture and reports are issued as follows:

A preliminary report will be issued following the scoring of each carcass or group of carcasses and a final report will be issued when the scoring of all carcasses in a test group has been completed.

- (1) The preliminary report will show the following information with respect to each animal and/or carcass:
 - (a) delivered weight of the animal;
 - (b) hot dressed weight (defatted);
 - (c) dressing percentage;
 - (d) carcass grade;

Range of Yearling Weight

- (e) carcass weight per day of age;
- (f) adjusted area of ribeye;
- (g) area of ribeye per 100 pounds of carcass weight;
- (h) fat thickness;
- (i) fat thickness per 100 pounds of carcass weight, and
- (j) rating for marbling.
- (2) The final report will reveal similar information for each animal and/or carcass, the average of the group in cases where averages are applicable but otherwise the range in ratings.

To date several breeders have made nominations under this policy and several of the A.I. Units are testing a number of their beef sires under this policy.

Bull Premium Policy

In an effort to encourage a wider distribution of good beef bulls premiums are payable to persons who purchase performance tested bulls at the Ontario bull sale or at consignment sales held under the auspices of Breeders' Clubs.

- (a) "performance tested bull" means a bull of a beef breed that
 - (i) has been approved from the standpoint of type,
- (ii) has been tested under the Advanced Registry Policy for Beef Cattle,
- (iii) has a record under that Policy of an average daily gain on test of 2.40 pounds, and
- (iv) has a weight per day of age, when out of a dam whose age at time of birth of the bull was:
 - 1. less than 3 years, 2.30 pounds,
 - 2. at least 3 years but less than 4 years, 2.35 pounds,
 - 3. at least 4 years but less than 10 years, 2.40 pounds,
 - 4. at least 10 years but less than 15 years, 2.35 pounds,
 - 5. at least 15 years, 2.30 pounds.

During the year premiums totalling \$29,835.20 were paid to the purchasers of 322 performance tested bulls.

Ontario Bull Sale

The Ontario bull sale, managed under the direction of the Live Stock Commissioner, offers to the beef cattle breeders of Ontario the largest number of performance tested bulls in Canada. Only those bulls qualifying under the designation of "performance tested" are eligible for the bull premium policy. However, this does not prohibit non-tested bulls from being eligible for entry at this sale.

Seventy per cent of the bulls offered at this sale were those which qualified as "performance tested". All entries are rigidly inspected and culled before being offered for sale, and only those passing these requirements are presented for auction. Any animals culled are taken home by the consignor.

A summary of the 1962 sale follows:

	Galloway	Angus	Shorthorns	Herefords
No. bulls entered	1	11	51	90
No. bulls withdrawn	0	0	4	4
No. bulls culled	0	0	8	2
No. bulls sold	1	11	39	84
Av. price	\$325.00	\$385.00	\$413.08	\$549.58
Top price		\$500.00	\$725.00	\$2,200.00
Av. price of top 10			\$504.00	\$1,152.50

Consignment Sales

Breeders' Clubs that have been approved by the Minister are eligible for grants to assist in defraying the expenses of operating consignment sales. In order to qualify, the sponsoring organization must restrict entries to animals which have

been inspected and approved by an inspector named by the Live Stock Commissioner, and which conform to high health standards. The grants are as follows:

- (1) To cattle breeders' associations \$5.00 per animal sold, up to a maximum of \$200.
- (2) To swine breeders' associations \$2.50 per head, up to a maximum of \$100.
- (3) To sheep breeders' associations \$1.00 per head sold, or the sale expenses, whichever is the lesser amount.

Cattle Sales

Breed	No. Sales	No. Animals Sold	Total Grants Paid
Holstein	14	501	\$2,185.00
Ayrshire	6	210	1,010.00
Guernsey	10	391	1,755.00
Jersey	2	71	345.00
Shorthorn	7	142	710.00
Hereford	8	231	1,150.00
Angus	6	301	1,405.00
Combined breed sales	3	74	370.00
		-	
	56	1,921	\$8,930.00

As will be noted above, the Live Stock Branch provides assistance to breed associations holding cattle sales during the year, in the form of a grant of \$5.00 per animal sold up to a maximum of \$200. In the case of beef breed sales, an inspection service is supplied by the Ontario Live Stock Branch for the purpose of choosing entries on the basis of type and individuality. The majority of the beef breed sales are as is to be expected mostly male animals, and since the Ontario Bull Premium Policy applies to beef breeds, it is necessary to have these bulls approved before being offered for sale at auction.

Swine Sales

In an effort to assist the breeders of pure bred swine, grants are made available to Breeders' Clubs holding sales during the year. Inspection for selection on type and health is supplied by the Live Stock Branch. Therefore all animals consigned to these sales are approved before being sold or becoming eligible for the grant.

The following is a complete report of the number of swine sales held during the year.

	No. Head Sold	Av. Price	Grant
Dufferin Pure Bred Beef & Swine	5	117.40	12.50
Zone 2 Yorkshire Clubs	42	147.26	100.00
Zone 4 Yorkshire Club	26	165.76	65.00
Lacombe Swine Breeders' Association	38	177.89	95.00
Waterloo A.R. Yorkshire	-	-	-
Stratford District Yorkshire Club	26	152.60	65.00
Grey County A.R. Yorkshire	23	127.50	57.50
Ontario Landrace	41	132.32	100.00
Wellington A.R. Yorkshire	29	135.00	72.50
Ontario Swine Breeders' Association	47	182.28	100.00
Elgin-Middlesex Yorkshire	26	95.38	65.00
South-Western Ontario Yorkshire	41	131.21	100.00

In the case of a Breeder's Club holding more than one sale during the year, the grant applies on only one sale. Several clubs hold more than one sale, and since they do not receive a grant, their second sale is not reported.

Sheep Sales

In an effort to further provide assistance to sales sponsored by sheep breeders' associations, the Ram Premium Policy applies. Sales made by private treaty are not eligible for premium, therefore, it is only at sales of this kind that a breeder may obtain a primium ram.

The following sales receiving a grant were held during the year:

	No. Head Sold	Av. Price	Grant
Ontario Sheep Breeders' Association	40	55.81	40.00
Grey-Bruce Sheep Breeders' Association	74	36.16	74.00
Ottawa Valley Sheep Breeders Assoc.	36	41.45	36.00
Zone 3 Sheep Breeders' Association	42	42.92	42.00
Simcoe-Dufferin Sheep Producers Assoc	. 63	41.43	63.00

Regional Shows

Breeders of pure bred live stock organize Regional Shows at a great many fall fairs in co-operation with the local sponsoring Agricultural Societies. This feature of fall fairs has not only assisted in getting out large numbers of live stock, but has fostered regional interest in better breeding. Entries are restricted to definite areas or zones in which the show is held. The Live Stock Branch provides generous grants to these associations on the basis of 20% of the prize money paid out up to, but not exceeding \$100. Many Regional Shows now held have a larger number of entries than some Class A and B shows. Class A fairs are naturally not eligible to hold a Regional Show, therefore, all Regional Shows held at smaller fall fairs act as trial ground from which the best animals are exhibited at the larger shows. Small breeders are induced to supporting Regional Shows owing to the equalization of prize money offered and the fact that professional showmen from outside are not allowed to compete which means that they do not capture all the prize money. Over the years these shows have been extremely well patronized and have maintained a very high interest among breeders in the number of animals being brought out. Regional shows are held for the beef and dairy breeds; the four leading breeds of swine as well as all leading breeds of sheep. Had it not been for the advent of Regional Shows, it is doubtful in some cases whether or not the local fall fairs could have maintained the interest that still exists in live stock shows.

The following is a statement of the Regional Shows held in 1962:

Cattle				
Breed	No. Shows	No. Entries	No. Animals	Total
			Shown	Grants
Holstein	42	6,493	5,260	\$3,938.20
Ayrshire	18	1,905	1,375	1,576.20
Jersey	22	2,339	1,864	1,799.39
Guernsey	14	1,408	1,103	1,304.40
Shorthorn	7	627	481	633.80
Hereford	7	586	438	587.60
Angus	5	414	323	356.00
D. P. Shorthorn	-	-	-	-
Red Poll	1	43	40	36.80
				10,232.39

Swine				
Yorkshire	6	432	355	469.50
Berkshire	1	58	47	58.00
Tamworth	1	73	59	97.50
Landrace	1	44	40	76.25
Sheep				
	5	1,243	1,015	500.00

Horse Shows

Interest in Horse Shows continues in a few localities mainly on account of breeders being located in these areas. The Live Stock Branch makes available a grant to Breed Associations to assist in financing special horse shows. Generally speaking such grants are on the basis of 50% of the prize money paid up to a maximum of \$300.00. This grant in some instances may be increased to \$500.00, provided the sponsor assigns a similar amount from the council for the county in which the show is held.

Grants paid in 1962 were as follows:

Linwood Spring Horse Show	\$300.00
Brooklin Spring Horse Show	300.00
Toronto Horse Show	300.00
Uxbridge Horse Show	300.00
Elgin Horse Breeder's Association	263.00
Middlesex Heavy Horse Show	100.00
St. Catharines Riding & Driving Club	500.00
North Blenheim Horse Show	300.00
Lynden District Horse Show	300.00

Boar Premium Policy

During the year 891 boars were inspected and approved for a Boar Premium, totalling \$28,245.00.

Purchasers of boars are supplied with an application form together with the certificates of approval, upon receipt of which the Live Stock Branch makes payment of the premium. To qualify for the designation "approved boar", a boar must be out of a sow with a performance record of 75 or more, and approved from the standpoint of type and conformation, and out of a herd that shows no visible evidence of atrophic rhinitis or other infectious diseases. All boars are inspected on the breeders premises by members of the Live Stock Branch when such animals are approximately 6 months of age.

The following schedule is the performance record required before a boar is eligible for this premium:

Record of Parents	Amount of Grant
Dam scoring 84 or more, sire qualified	\$35.00
Dam scoring 84 or more, sire not qualified	30.00
Dam scoring 75 - 83, sire qualified	30.00
Dam scoring 75 - 83, sire not qualified	25.00

Ram Premium Policy

Where sheep sales are held under the auspices of an approved Breeders' Club, assistance in the form of 20% of the purchase price but not exceeding \$25.00 is paid on yearling rams and ram lambs. The only animals eligible for a premium are those which have been inspected before the sale by a member of the Live Stock Branch and a representative of the Ontario Sheep Breeders' Association.

In 1962 premiums totalling \$802.00 were paid to purchasers of 82 rams.

Ram Loaning Policy

In 1961 a Federal-Provincial Freight Assistance Policy was established whereby both Departments on a 50-50 basis paid for two-thirds of the total freight on all sheep purchased under a Sheep Assistance Policy if purchased in Western Canada. These Western range ewes were to be kept for breeding purposes and to further assist purchasers of ewes, the Live Stock Branch made available rams on loan on the basis of one ram for every 40 ewes, but in no case did any purchaser receive a total of more than 4 rams. Rams purchased under this policy are still in the hands of those who received assistance in the fall of 1961. In 1962 this policy was continued and under the Sheep Freight Assistance the Department paid \$1,432.00. Under the ram loaning policy the cost was \$1,348.00, plus delivery charges of \$100.09.

Certified Herd Policy for Swine

This policy was introduced in May of 1960 for the purpose of assisting the breeders of pure bred swine in establishing herds that are free from virus pneumonia and infectious atrophic rhinitis, and of giving official recognition to breeders who have achieved this objective. These diseases which are prevalent in Ontario herds cause serious economic losses to the swine industry. In the case of both diseases, there is no practical test available, there is no effective immunizing agent, and no effective means of treatment. Although clinical symptoms are readily detected in certain herds affected with one or both of these diseases, these diseases may exist in other herds in a form which is not easily recognized. Consequently, it is not possible to rely on a visual inspection as a means of diagnosis. However, a diagnosis can be made on the basis of clinical information obtained from regular inspections, combined with the results of post mortem examinations conducted on heads and lungs from at least one-third of the natural increase in a herd over a period of one year. Atrophic rhinitis produces lesions in the nasal passages and virus pneumonia produces lesions in the lungs.

When this policy was conceived, it was assumed that there were pure bred herds existing in the Province which were free of these diseases. However, the findings to date would suggest that this assumption may not be correct. Of 40 herds (exclusive of S.P.F. herds) enrolled under the Policy, all but one have been found to be infected with one or both diseases, with the remaining one still in doubt.

Because of these disappointing results, more attention has been focussed on the establishment of Specific Pathogen Free (S.P.F.) herds. S.P.F. pigs are those that have normal microbiological flora present but do not have certain specified harmful pathogens. The primary S.P.F. pigs are obtained by surgery. Operations are performed at, or shortly before, the time the sow is due to farrow. The little pigs are removed from the uterus under aseptic conditions; thus they are free of any virus or bacteria carried by the sow. They are kept in incubators under aseptic

conditions for one week, and then transferred to special brooders. At four to five weeks of age, the pigs are taken from the laboratory to a farm that has been free of swine for at least six weeks. The equipment and facilities on the farm must be cleaned and disinfected prior to the pigs arrival.

Of the fifteen herds originally enrolled under the Policy two have been certified and six more are expected to qualify for certification within the near future. During the year five new herds have been enrolled making a total of twenty participating in this program.

Owners of herds enrolled have reported that their pigs are making fast and economical gains. These herds receive supervision under the Policy, that is: clinical examinations are made at six-week intervals, and for a period of one year following enrolment, post mortem examinations are conducted on the heads and lungs of at least one-third of the pigs in each litter upon reaching market weight.

Regular herd inspections are continued following certification; however, fewer pigs are required for post mortem examination.

Rabies Indemnity

Assistance to live stock owners for animals lost owing to rabies has been provided since 1958, but up to September 1961 no definite policy was established. A permanent policy was introduced and established in the fall of 1961 whereby provision is made to pay claims for all animals dying as a result of rabies, provided such claims are certified by a Health of Animals Division Veterinarian. Upon receipt of a certificate of death signed by a Health of Animals veterinarian on which he has placed a valuation on the animal, payment is made. By agreement between the Federal and Provincial Governments 40% of the indemnity is paid by the former and 60% by the province. No claims for animals lost are accepted unless accompanied by the necessary Health of Animals Certificate indicating that rabies was the actual cause of death. There appears to be no indication that the epedimic is on the wane. Claims continue at a high monthly rate and are received from practically every county in Eastern, Central and the Northern portions of Western Ontario. It appears from records that a surge of rabies originates in the wild animals in the north then gradually spreads to the counties in Old Ontario.

During the year 1962, the Live Stock Branch paid claims amounting to \$36,200.34.

Freight Assistance

Northern Ontario, located as it is quite some distance from the supply of available animals for breeding purposes, continues to receive freight assistance in accordance with a prescribed schedule when live stock is purchased in Old Ontario and in North-western Ontario from the Western Provinces. With the growth of cities in Northern Ontario large numbers of dairy cattle have been moved into that area. A noticeable increase took place this year in the districts west of the Great Lakes particularly in Rainy River and Thunder Bay. In Rainy River 81 head were brought in last year while this year 311 were brought in. The increase in this instance has been fostered by the fact that a feeder cattle auction is held in that district each year and also due to the fact that they have developed a specialized beef program. Purchases in this particular area were made mostly in Manitoba with 2 or 3 smaller purchases having been made in Saskatchewan. Numbers of dairy cattle moving into the area show a gradual increase each year.

Freight assistance under this policy makes a market for Southern live stock breeders and provides the northern producer with cattle at a reasonable price.

The following districts receive payments as listed under this policy:

Districts to which	No. Head	Amount Paid
livestock shipped		
Algoma	288	\$3,979.04
Cochrane	118	1,976.62
Manitoulin	53	620.12
Muskoka	20	159.11
Nipissing	241	2,400.00
Parry Sound	114	956.48
Rainy River	311	3,270.45
Sudbury	179	1,858.87
Temiskaming	33	429.00
Thunder Bay	160	2,757.93
Kenora	90	910.00
The total amount paid in freight assistance was	1,607	\$19,317.62

Foreign Exhibitions

Freight assistance is available to Ontario Breeders' Clubs that undertake to sponsor exhibitions in United States or special shows in Western Canada. All animals comprising such exhibits are selected by members appointed for the purpose before being allowed to qualify for assistance.

In 1962 at the National Dairy Show held in Chicago, Ontario Holsteins, Jerseys and Shorthorns were exhibited at Chicago and won a major share of the awards.

The province benefits in the advertising that breeders give to Ontario live stock. Sales of pure bred animals are made to purchasers in the United States when such top quality animals are shown.

In July of 1962 an all Canada Sheep Show was held at Brandon, Manitoba. The Live Stock Branch sponsored two car loads made up by exhibitors from the Province of Ontario. Ontario carried off the major share of all the awards that were offered.

Subsidized Veterinary Units

Under this assistance policy provision was made to make available the services of a veterinarian so that live stock owners within a prescribed area would be able to obtain veterinary service, also it was designed to establish a veterinary in each

district with the hope that he would be able to develop a veterinary practice which together with the assistance received from the Department would make it possible for him to carry on and give service.

In districts requiring veterinarians a committee is formed to assist in the administration of the Unit. The Live Stock Branch makes available a grant up to a maximum of \$1,800.00 per year, providing the district unit raises a similar amount. Veterinarians are allowed to charge a regulated fee for services to all areas in the district.

Agreements are negotiated between the unit and the veterinarian so that all calls are based on a standard fee. Much satisfaction has been reported from various areas in which subsidized veterinarians have been located. However, some difficulty has been experienced during the past year in obtaining veterinarians to practice in this field. Two units are at present without veterinarians. Service in the meantime is being carried on by former practitioners who reside in the area. There are 15 veterinarian units in the Territorial Districts, 14 of which are located in Northern Ontario. The remaining unit is located in the areas of South-western Renfrew and the Northern areas of the counties of Lennox and Addington, and Hastings.

The total amount of the grants paid in 1962 was \$24,853.17.

Ontario Telephone Service Commission

The Ontario Telephone Service Commission is responsible for the administration of the Telephone Act (R.S.O. 1960, Chapter 394) and was created, not only to administer the Act, but to bring about an improvement in service in the rural parts of Ontario. The Commission is composed of a Chairman, Vice-Chairman and three members. The members are actively engaged in the telephone industry in different sections of the province. The Chairman and Vice-Chairman are permanent employees of the Department of Agriculture and the Chairman is also Director of the Telephone Branch, which provides staff for the Commission.

This staff, consisting of engineering and commercial personnel, advises the Commission on matters brought before it and also provides engineering and commercial assistance to the independent telephone systems within the jurisdiction of Ontario.

During 1962 the Commission held regular monthly meetings in its Toronto office to hear applications made under provisions of The Telephone Act. One public hearing was held in Oro Township in the County of Simcoe in response to an application of customers of the Oro Telephone Company Limited claiming the service provided by the company was poor and inadequate for the needs of those living in the area.

The Commission, at its meetings in the Toronto office, also received deputations representing telephone associations, telephone systems, municipal councils and telephone customers. The Commission also met with officials of the Bell Telephone Company, the Hydro-Electric Power Commission of Ontario, Members of Parliaments and others seeking advice on telephone matters. Members of the Commission and staff attended meetings of telephone associations, annual meetings of systems and special meetings to give advice and assistance in improving service.

Quality of Telephone Service

Quality of service depends upon many factors such as condition of plant, efficiency of operators, management and staff, circuit loads and methods of operation. With the introduction of dial switching, which requires the telephone plant to be in good condition, telephone service has been greatly improved in the areas served by systems that formerly operated on a manual basis. Many other systems have construction programs underway and will be providing dial service within the next few years. Other systems have improved the service by replacing obsolete equipment and adding additional lines to cut down the number of customers per line.

There are a number of systems that do not operate a sufficient number of telephones to make an efficient operation and are thus unable to derive sufficient revenue to finance the improvements which are necessary to give their customers satisfactory service. These systems serve only a small percentage of the telephones operated by all systems. It is expected that, in most cases, they will cease to operate and the area they serve will be taken over by larger systems within the next few years.

It is, therefore, believed that taking an average of the whole province, service can now be considered to be fair with improvements going forward at an accelerated pace.

The larger telephone systems operating in the province are doing a good job of extending telephone service to remote settlements, mines and resort areas with the result that there are now few areas which may be termed to be unserved.

During the year ending December 31, 1962, a total of 96 Orders were issued by the Commission as follows:

For approval of municipal by-laws granting franchises	3
For approval of distribution of assets of municipal systems	2
For approval of telephone charges	12
For approval of Special Resolutions and Company By-laws	4
For approval of agreements for interchange of service	2
For approval of municipal systems' by-laws	1
For approval of sale of system or portion of system	30
For approval of extension to another municipality	1
For authority to issue evidence of indebtedness	23
For authority to use depreciation fund monies for construction	1
For Order prescribing date of annual meeting of subscribers	13
Order for Public Hearing	1
Orders to amend existing Orders	2
Order cancelled and application withdrawn	1
	96

The Telephone Engineering and Commercial Branch

The work of the Telephone Branch is divided between the Engineering Division, which consists of two Professional Engineers, four Engineer's Assistants and a Clerk-Stenographer, and the Commercial Division, which consists of one Executive Officer, one Accountant and a Clerk Stenographer.

Engineering Division

This group is responsible for attending to the technical aspects of requests for assistance made to the Branch. Its action is required in quite varied situations, such as the following:

- 1. Requests for assistance in planning conversion to common battery (dial and manual) operation, and re-arrangement and extensions to existing telephone plant.
- 2. Co-ordination with other telephone systems.
- 3. Co-ordination with Public Utilities, Hydro-Electric Power Commission of Ontario and road administrations.
- 4. Liaison with manufacturers and suppliers of communication equipment.

The major portion of the work continues to be derived from the requests for planning assistance and such requests often involve attention to all of the other items mentioned above.

During 1962, this assistance has been responsible for improved service being provided by many independent systems as they have been re-built in accordance with plans prepared for them by the Engineering Division. Open wire construction continues to be replaced by cable plant in urban and rural areas and in turn aerial cable plant is being superceded by buried cable construction. It is now well established that, for long-term requirements, buried cable is a desirable fa-

cility since it offers reduced maintenance costs and freedom from interference with other distribution facilities.

The following is a summary of the major activities of the Engineering staff during the past fiscal year:

Item
(1) Control offices engineered and out into services dial

Number

(1) Central C	inces engineered	and cut into service.	ulai	7
(2) Central c	offices engineered	and cut into service:	manual	2
(3) Systems submitted		surveys were made	and recommended	program 12

- (4) Systems for which detailed plans were engineered and provided.
- (5) Systems which have been assisted in moving telephone lines due to highway construction.
- (6) Systems for which planning was undertaken and is continuing. 23
 The Division field forces spent in excess of 6,000 man-hours in assisting systems and made 246 inspections and visits to some sixty telephone systems.

Commercial Division

The Commercial Division is prepared to assist telephone systems with general business and accounting advice. The staff is qualified to instruct the Secretaries of systems in improved bookkeeping methods and assist them to establish new systems of records. In 1962 the time of one man was devoted almost exclusively to this phase of the work and excellent results have been achieved.

A large portion of the work of the Commercial Division consists of answering queries received both by mail and in person from the various systems, concerning proper procedures to follow when they wish to take action under the provisions of The Telephone Act, The Corporations Act and The Municipal Act.

Under The Telephone Act, a telephone system must apply to the Commission for an Order of approval before a by-law, schedule of rates, or certain aspects of the physical or financial set-up of the system can legally be changed. The Commercial Division prepares the information on which the Commission bases its decision as to whether or not the action should be approved.

In the case of an application for an Order approving the sale of a system or a part thereof, an investigation must be made to determine that a future merger or other desirable development will not be prejudiced. The studies of various merger possibilities require cost figures and revenue forecasts and the Commercial and Engineering Divisions combine in providing this informaton.

In the case of an application for an increase in rates, a study must be made both to determine that the rates are reasonable, from the standpoint of the telephone users, and that they are adequate for the needs of the system concerned. In some cases, proposed rates have not been approved in the first instance because they were too low, and the system has been shown that it must have a certain revenue in order to provide proper service and that a more realistic rate schedule should be established.

The Commercial Division also collects and checks the "Telephone Statistics" reporting form on which all systems make an annual return to the Dominion Bureau of Statistics and to this Commission. These returns are used extensively in analysing the problems of individual systems and a summary of the figures is attached to and forms part of the annual report of the Commission.

SUMMARY OF STATISTICS

Complete returns for the calendar year 1962 are not available at the date of publication of this report but detailed statistics on individual systems will be contained in the Report of the Ontario Telephone Service Commission — 1962, which will be published later in the year.

As at January 1, 1962 there were 233 independent telephone systems within the jurisdiction of Ontario operating approximately 174,250 telephones. During 1962, 35 independent systems, operating 5,760 telephones, ceased to operate or were sold to other systems. At January 1, 1963, there were therefore 198 remaining independent systems reporting. It is assumed that natural growth of the remaining systems will result in the total number of operated telephones remaining almost the same despite the fact that most of the sales were made outside the independent field.

Sales

The following 23 systems gave up business during 1962 and their areas will now be served by the Bell Telephone Company of Canada. Normally, completely new facilities are installed and, when these are in operation, old plant is removed.

		No. of
Name	Address	Phones
Beaver Creek Telephone Co. Ltd.	Marmora	33
Clavering Telephone Co. Ltd	Wiarton	39
Cramahe Municipal Telephone System	Castleton	408
Derryville Telephone Co. Ltd.	Cannington	22
Douro Municipal Telephone System	Douro	134
Ellis Rural Telephone Co. Ltd		
Emily Municipal Telephone System		
Glenelg Municipal Telephone System		
Henderson (Dr.) Telephone Co. Ltd.		
Johnson and Brandon Telephone Co. Ltd.		15
Johnson Municipal Telephone System	Desbarats	148
Lily Creek Telephone Co. Ltd.	Marmora	11
Lucknow and Kinloss Telephone Co. Ltd.	Lucknow	16
Marmora Municipal Telephone System	Marmora	75
Mono Mills Telephone Co. Ltd.	Mono Mills	212
North Brock Telephone Co. Ltd.	Cannington	14
Perth and Christie's Lake Telephone Co. Ltd.	Glen Tay	149
Riverview Telephone Co. Ltd.	Cannington	9
Ruby Telephone Co. Ltd.	Golden Lake	11
Second Line of Orummond Telephone Co. Ltd.	Perth	41
Tarbutt Municipal Telephone System	MacLennan	65
Tyendinaga Municipal Telephone System	Lonsdale	200
Verona and Bellrock Telephone Co. Ltd.	Verona	36

Twelve additional systems were sold to larger telephone companies and their operations will be integrated with those of the new owners:

		No. of	
Name	Address	Phones	Sold To
Ayton Telephone Co. Ltd	Ayton	21	Wightman Tel. System
Belmont Telephone Co-operative			
Association Ltd	Belmont	545	Bell Telephone Co.
Colborne Municipal Telephone			
System	Carlow	216	Bell Telephone Co.
Cumberland Municipal			_
Telephone System	Navan		Metcalfe Tels. Ltd.
Fifth Side Line Telephone Co.		618	St. Joseph Island
·	Landing		Municipal Tel. Sys.
Glamorgan Municipal Telephone		10	Dysart Municipal
System	Gooderham		Telephone System
Ilderton Telephone Co. Ltd	Ilderton	31	Bell Telephone Co.
Normanby Telephone Co. Ltd.	Ayton	1,149	Wightman Telephone
		18	System
North Easthope Municipal			
Telephone System	Shakespeare	564	Bell Telephone Co.
North River Municipal			
Telephone System	Coldwater	86	Coldwater Municipal
			Telephone System
Oliver Municipal Telephone			
System	Murillo	121	Port Arthur Municipal
			Telephone System
South Monaghan Municipal	- · · · ·		
Telephone System	Bailieboro	258	Port Hope Tel. Co.
		2 (25	Ltd. and Bell Tele-
		3,637	phone Co.

Two Orders were issued during the year to approve change of ownership. The systems concerned will, however, continue to operate as separate entities and under the same name.

- (1) The Community Telephone Company Limited of Dunnville, Ontario, purchased additional shares of the Eastern Community Telephone Company Limited which operates approximately 700 telephones from exchanges at Dorland, Newburgh, Selby and Tamworth. Community's total holding now constitutes a controlling interest in the latter Company.
- (2) The Bell Telephone Company of Canada purchased a controlling interest in the Monk Rural Telephone Company Limited which operates approximately 900 telephones at Carp, Ontario.

Three sales of a portion of a system were completed during the year.

- (1) The Caradoc-Ekfrid Telephone Company Limited sold a portion of its territory in the Strathroy area to the Bell Telephone Company. Approximately 130 telephones which had been operated on a service station basis from the Strathroy exchange were involved.
- (2) The Percy Municipal Telephone System sold a portion of its territory in the Hastings area to the Bell Telephone Company. Approximately 110 tele-

phones which had been operated on a service station basis from the Hastings exchange were involved.

(3) The Roxborough Municipal Telephone System sold a portion of its territory in the Maxville area to the Bell Telephone Company. Approximately 80 telephones which had been operated on a service station basis from the Maxville exchange were involved.

In addition to the above completed transactions, arrangements have been made for the sale or overbuild during 1963-64 of an additional 22 systems operating approximately 3,000 telephones. Each case has been studied individually by the Commission and an Order has been issued approving the action.

Preliminary negotiations are underway for the sale or overbuild of 30 further systems although final Order of approval has not yet been issued by the Commission. In many cases, however, the Commission has been called upon to make a study of the situation and assist the system concerned to determine the best course of action. These 30 systems operate approximately 2,800 telephones and it is anticipated that the sale or overbuild of most of them will be completed within the next five years.

Organization of Systems

The independent telephone systems in Ontario may be divided into four Classes according to type of ownership. The 198 systems operating at the beginning of 1963 are organized as shown in the following table, which also shows the number of telephones in each of the groups as of January 1, 1962.

Organization of Telephone Systems

	Sys	stems	Telephones	
Type of Ownership	No.	1 %	No.	1 %
Systems operated as Public Utilities				
by Municipal Corporations	8	4.	47,695	28.
Municipal Systems	45	23.	32,867	20.
Systems owned by Incorporated				
Telephone Companies	130	66.	85,926	50.
Systems owned by Individuals or Partnerships	15	7.	2,622	2.
•	198	100.	169,110	100.

Size of Systems

The relative size of the independent systems is also of interest. Due to a trend of the times, many small systems are finding it economically impossible to continue to operate and are either selling out or vacating the area and making arrangements for another system to provide service. In the early days of the telephone industry, many groups of farmers, realizing the value of the telephone to them in conducting their business, organized telephone systems in their own communities, rather than wait until one of the larger companies could serve them. Good telephone service is today of even greater value and may be considered almost essential in the marketing of farm produce, yet it is from the rural areas that most complaints are received. Telephone service throughout rural Ontario is, however, continually improving. The sale of smaller systems to their larger neighbours generally results

in more efficient operation and there is no doubt that most of the remaining independents, with the encouragement and assistance of the Ontario Telephone Service Commission, are making considerable progress in the modernization of their equipment and methods.

The following table indicates the size of systems operating in Ontario as of January 1, 1963, and also shows the split between Connecting Companies and Service Station Systems. "Connecting Companies" are those which operate a complete telephone plant including switchboards, while "Service Station Systems" provide only the telephone and line facilities which connect their subscribers with another company's switchboard and they must pay a switching charge for such connection.

Size of Telephone Systems

No. of Telephones Operated			Service Station Systems		Total	
	No.	%	No.	%	No.	%
1-10	1	.7	8	11.	9	4.6
11-25	1	.7	28	41.	29	14.6
26-50	5	3.7	15	22.	20	10.1
51-100	7	5.1	9	13.	16	8.1
101-300	31	24.2	5	· 7.	36	18.2
301-600	34	26.6	4	6.	38	19.2
601-1,000	22	17.2			22	11.1
1,001-2,000	17	13.3			17	8.6
2,001-5,000	8	6.2			8	4.0
5,001-Over	3	2.3		_	3	1.5
	129	100.0	69	100.	198	100.0

It will be noted from the above table that almost 40 per cent of the systems operate less than 100 stations each and 55 per cent have less than 300. Since the average system of less than 300 telephones cannot justify or afford a full-time employee to construct and maintain the plant, and still less, pay for management which is experienced in the telephone business, it is obvious that at least this 55 per cent of the total systems are operated not as a business but as something secondary to the principal occupations of the people concerned. Only 28 systems own more than 1,000 telephones which number might be considered the minimum for efficient operation.

Provincial Apiarist

A total of 39,359 colonies in 2,915 apiaries were inspected for brood diseases by Ontario inspectors in 1962. American Foulbrood was found in 7.7 per cent of the apiaries and 1.2 per cent of the colonies.

In 1962, 2,633 beekeepers registered 124,422 colonies in 5,179 apiaries.

One-hundred and seventy-five (175) permits were issued for the moving and selling of colonies of bees and equipment. Forty (40) permits were issued for pollination service.

The Ontario honey crop in 1962 was 11,771,000 pounds an average of 93 pounds per colony.

INSPECTION AND REGISTRATION OF COLONIES OF BEES

		Inspection	ı		Registration	l
	Ap	iarise	Co	lonies	Apiarise	Colonies
	Inspected		Inspected	Diseased	_	
Algoma	15	-	245	-	10	274
Brant	81	12	1,261	18	69	933
Bruce	14	-	63	-	152	3,936
Carleton	194	18	2,674	19	154	4,530
Cochrane	15	1	165	-	-15	150
Dufferin	31	-	391	-	57	1,755
Dundas	18	2	208	2	65	1,595
Durham	76	5	918	5	68	1,272
Elgin	63	-	872	-	126	3,056
Essex	106	63	1,009	8	191	2,972
Frontenac	8	-	118	-	47	1,105
Glengarry	39	2	1,018	21	68	2,342
Grenville	20	1	352	1	45	997
Grey	27	-	348	-	213	7,111
Haldimand	33	-	561	-	143	3,451
Haliburton	8	-	27	-	16	81
Halton	6	1	121	20	109	3,245
Hastings	69	4	1,431	10	194	6,515
Huron	70	4	1,699	10	162	4,567
Kenora	-	-	-	-	3	14
Kent	107	2	931	7	84	734
Lambton	50	-	439	-	254	6,786
Lanark	52	-	1,140	**	97	3,382
Leeds	48	2	1,369	2	79	2,420
Lennox-Adding	ton 6	-	108	19	68	2,741
Lincoln	119	10	950	7	180	2,104
Manitoulin	-	-	-	-	10	58
Middlesex	75	2	1,029	1	180	4,801
Muskoka	11	-	91	_	10	62
Nipissing	-	-	per.	-	7	44

Norfolk	79	8	1,101	125	74	899
Northumberlan	d 158	4	898	12	121	2,875
Ontario	115	6	1,618	12	138	2,681
Oxford	91	2	1,230	4	90	1,743
Patricia	-	~	_	_	-	_
Parry Sound	1	1	5	1	23	290
Peel	9	1	125	6	134	3,426
Perth	52	4	1,268	7	103	2,821
Peterboro	25	-	371	-	90	1,688
Prescott	46	1	654	2	44	1,972
Prince Edward	67	6	1,053	19	49	1,247
Rainy River	13	-	212	-	30	859
Renfrew	45	2	860	7	114	3,723
Russell	47	2	453	3	30	690
Simcoe	113	1	2,014	2	290	8,058
Stormont	51	2	1,191	-	60	1,714
Sudbury	-	-	-	-	5	19
Thunder Bay	7-		9	_	14	58
Timiskaming	13	3	478	9	45	1,644
Victoria	53	-	518	**	89	1,882
Waterloo	66	6	920	20	105	2,189
Welland	98	17	783	48	162	1,894
Wellington	106	1	811	2	110	2,838
Wentworth	140	6	1,348	12	152	2,019
York	166	23	1,901	47	231	4,160
Totals	2,915	225	39,359	488	5,179	124,422
Percentage		7.7			1.2	

Report of the Provincial Entomologist

The duties of the Provincial Entomologist in relation to the Plant Diseases Act were carried out in co-operation with the Farm Products Inspection Service of the Ontario Department of Agriculture and the Plant Protection Division of the Canada Department of Agriculture. All other work was conducted at the Department of Zoology, Ontario Agriculture College, Guelph.

Teaching and Research

Teaching and insect control work in relation to agriculture were continued, this part being given a small percentage of the total time.

Extension

The major part of the work was on extension. Liaison in control recommendations for insects and mites attacking agricultural crops was maintained with the Canada Department of Agriculture and where applicable with other departments of the Ontario Government. Extension outlines and press and radio releases were prepared. Considerable time was spent co-operating with entomologists of the Canada Department of Agriculture in a research program and on extension activities in relation to carrot rust fly control. This insect was of major concern in 1962. The face fly on cattle and cluster fly infestations in houses continued to plague rural areas. The Dutch elm disease carried by elm bark beetles became more noticeable. However, in general insect infestations did not cause serious damage in 1962. The Spray Service for fruit was continued.

Japanese beetle traps to detect the degree of infestation in the southern parts of Ontario were operated by the Canada and Ontario Departments of Agriculture. As a result of this survey, approximately 400 acres of land were treated using hand equipment with 10 per cent dieldrin granular at the rate of 30 pounds per acre. The areas treated were at Windsor, Leamington, Niagara Falls, St. Catharines and Hamilton.



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